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ABSTRACT

The value and function of play behavior in young children, and the process and conditions by which play contributes to learning, cognition and problem solving, are explored in this literature review. The first section examines early theories of play, the psychoanalytic theory of play, and the developmental stages of play. Common elements of play are described and criteria for distinguishing play from non-play behavior are examined. The second section describes different approaches to viewing play: sciencing (which includes testing and rehypothessizing); symbolic (designating some object or activity to replace others); socio-dramatic (using symbolic play with regard to role playing); creativity (in which something unique evolves through divergent thinking, problem solving and hypothesis testing); and block play (involving construction). The third section discusses the relationship between play and learning, cognition, knowledge and knowing. Piaget's theories of child's play and intellectual development are central to this discussion. The last section explores the decisive role the child's environment has in the play and learning process. Parents, other adults and teachers are seen as having a crucial role in creating an environment for play. Ways in which parent's actions can foster or discourage play behavior are discussed. (Author/SE)

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TRINITY COLLEGE

A REVIEW OF PLAY AND
ITS RELATIONSHIP TO LEARNING

FIELD STUDY 600

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INTRODUCTION

High in a tree in the green Tanzanian forest a small brown figure bends and molds small branches and leaves into a chaotic round shape. A bit higher the symmetrical round bowl of an adult chimpanzee's nest--her bed for the night--is perfectly balanced in the fork of the tree. In a nursery school young children build 'houses' which have living areas, doors, kitchens, etc. What is the thread of behavior that connects these seemingly disparate events, the chaotic leaf bundles of the young chimpanzee with the block construction of the young child? The simple answer is, of course, play. The baby chimpanzee was playfully imitating its mother while she was building their real bed for the night. The children built the block structure in order to play at being Mommy and Daddy or just themselves in a pretend 'real' house or just to build. However, as this paper will show, the simple answer that--this is play--will not suffice, for there are many different kinds of behavior in both children and adults that most observers would call play. Why do these seemingly different behaviors feel like play to the observer? What is the function or value of these behaviors for the person and society? These are questions which naturally arise from observing that radically different behaviors are all play.

Because play behavior is so common among human beings and higher animals it is not surprising that many people have

tried to answer these questions--what is play and what is its function or value. They have found that play is a critical part of the learning process of the young child and the young animal and that it precipitates growth in all areas of the child's life: intellectual, social, emotional, creative, and physical. Play serves, for children and animals, as a way of integrating an understanding of their environment and the people and objects interacting within the environment. Play is an essentially private and unique experience for the child, though certainly the quality of this experience is strongly affected by the child's environment.

In order to understand the value and function of play and the evolution of concepts or thinking about play, this paper will first look at animal play, then several early theories of play followed by the psychoanalytic theory of play. In order to get a clear idea of what play is, the paper will examine and describe the common elements of play. Criteria will be discussed for distinguishing play from non-play behavior or for directing our attention to one end of a subtle continuum of behaviors. We shall see that the work-play distinction is a particularly misleading one. Quite a few writers have tried to define play with different groups of criteria. However, many groups of criteria overlap, so the paper identifies and analyzes a single comprehensive list of criteria.

A different approach to the value and functions of play is to look not only at criteria which identify it but also at the different types of play. It is reasonable that

any set of behavior which is so broadly recognized would have several identifiable subcategories. Some of these different approaches to viewing play include sciencing, socio-dramatic, creativity and block play, which will be discussed and explored.

This paper explores the process and conditions by which play contributes to learning, cognition and problem solving. Relating play to the child's cognitive development shows how play behaviors contribute to this development and how the types and styles of play change over time as the child grows up. Piaget's theories of child's play (1960) and intellectual development are central to this discussion.

Lastly, the paper explores the decisive role the child's environment has in the play and learning process. Parents, other adults and teachers have a crucial role in creating this environment for play and their actions can strongly foster or discourage play behavior.

Animals and Play

Observers of animals and man have long known that all animals play in the early part of their life span and consider play an integral part of the development, growth and learning process.

Animal play is distinctly related to child's play. In reviewing various scholars' ideas on play, Catherine Garvey (1977) said, "...the fact that almost universally the young of higher species engage in playful behavior that resembles adult activities but is somehow incomplete or unperfected led one scholar to propose that play was instinctive, its

function being to exercise skills necessary for adult life."¹

The more evolved the species is on the evolutionary scale the more they play. This is particularly true of young mammals. (Sutton-Smith, 1975; Arnaud, 1974) Alison Jolly (1972) an ethologist whose work has focussed on the study of apes reports that "young mammals play...if anything, primates play more than other mammals."² "The paradox," Sutton-Smith says "is that play has usually been thought to be non-productive while at the same time it has been declared to increase in extent as one ascends the evolutionary scale."³

Jane Van Lawick-Goodall (1971) in her book In the Shadow of Man observed the play of chimpanzees and reports it to be an integral part of their development. Studying chimpanzees' behavior in Tanzania for more than a decade, Van Lawick-Goodall reported on the similarity between the play of chimpanzees and that of humans. Both young humans and young chimpanzees spend a great deal of time in playing. Play is preparation for adulthood: the "social play" of young chimps; the deep involvement that they have in their activity, the game-like activities, the testing and trying on--a young chimp practices making his own nesting places 2-3 years before he has to do it "for real". (Goodall, 1971) All of these qualities of young chimpanzee play are also part of young human play. Primates participate in locomotor play and object play but especially in social play. In small troops the young play with monkeys of all ages; if there are enough young monkeys then they tend to play mostly with each

other. This play is "training for future social roles."⁴

Play is necessary for normal growth and development. (Garvey, 1977) Jolly reported that monkeys who fail to have this play experience in the first six months of their childhood become psychotic. (Jolly, 1972)

"Mammals as a whole," reports Susan Isaacs, "are far more able to learn by individual experience than say, the insects, reptiles, or even birds, who all live by relatively fixed instincts."⁵ She further notes "the fact that animals which are able to learn more are also able to play more. Those with fixed instincts play not at all...but the playing animals and in proportion as they play, gain something of an individual wisdom."⁶

There is some general disagreement on the role of play in animal behavior. Goodall notes,

Play is a much argued about category of behavior in scientific circles. What is it? How should it be defined? What is its function? And yet, despite all the discussions and speculations, most people, whether they be trained scientists or casual observers agree as to when animals are playing, be they watching a litter of puppies tumbling about or a young chimpanzee turning somersaults.

Whether or not scientists will ever agree as to the function of play, it does serve to make the growing youngster familiar with his environment.⁷ (underlining mine)

Part II

WHAT IS PLAY?

WHAT IS PLAY?

Early Theories of Play

Theories of play before the 20th century are generally known as the "classical" theories of play. The history of play theory dates to the early Greek thinkers. Theorizing about play, Plato thought that play was children's practice for future serious activity. (Jackson, 1974; Millar, 1974)

The so-called "surplus energy" theory of play (Spencer, 1873) proposed the thesis that because children are relieved of the job of self-preservation by their parents they are left with extra or "surplus energy." This energy releases itself in the "aimless" activity called play. Spencer believed that play is found only in the higher and more advanced species because lower organisms are concerned only with survival. He hypothesized there is a certain amount of energy available to each animal and the energy that is not used for self-preservation is excess and comes out in the form of play. (Jackson, 1974; Gilmore, 1971)

Around the turn of the century a number of other play theories were put forth. Lazarus (1883) and Patrick (1916) suggested the so-called "relaxation theory" (Jackson, 1974) which views play as resulting from "deficient energy," instead of surplus energy. The role of play is to dissipate the inhibitions which result from fatigue. Play is therefore

usually observed in young children because at this time the young person faces many more new tasks than the adult.

The "pre-exercise" theory (Groos, 1898, 1908) of play, which was also developed around the turn of the century viewed play as preparation for adulthood. (Garvey, 1977) Groos believed that play was instinctive behavior. He felt that childhood is the period of life where the individual fixes his instincts and exercises them in preparation for adulthood. (Herron, 1971). He saw animals' play-fighting and children's imitative behavior as preparation for maturity. (Garvey, 1977)

Stanley Hall (1906) a contemporary of Groos, noting the repetitive and imitative characteristics of play, and the fact that play changes with age, proposed the "recapitulation theory" of play. (Garvey, 1977) He suggested that children's play mirrors the course of evolution from pre-historic man to the present; that each child passes through stages recapitulating the phylogenic transition from animal to human play and the cultural stages in the development of the races. Hall was the first to utilize the concept of stages in his analysis of play. (Gilmore, 1971).

Psychoanalytic Theory of Play

Sigmund Freud (1908, 1920, 1926) first introduced the psychoanalytic play theory in his observation and discussion of fantasy and repetitive behaviors. (Gilmore, 1971). Freud felt play was closely related to fantasy behavior. He defined play as fantasy woven around real objects, i.e. toys as

opposed to "pure" fantasy, or daydreaming. (Gilmore, 1971) There were two distinct types of wishes which Freud considered the source of child's play. First, there was the child's wish to be grown up, to be in control or to create a situation which he would like to see exist. This is contiguous with the principle to seek immediate pleasure. The second type of wish comes from the child's desire to take an active role in a painful or anxiety producing experience that was passively suffered. Repetitive behavior is characteristic in this type of play. (Gilmore, 1971)

As an example of both types, Freud (1920) describes a young boy who repeatedly played the same game of his own invention. Even though Freud was living with the child's family, Freud noted that it took him weeks to interpret the meaning of the game, which the little boy continually repeated. Freud said that the boy was "not precocious in his intellectual development," had a close relationship with both parents and was particularly attached to his mother. He "conscientiously obeyed orders..." and "never cried when his mother left him for a few hours."⁸ He had, however, an "occasional disturbing habit of taking any small objects he could get hold of and throwing them away from him into a corner, under a bed and so on."⁹

As the boy did this he would let out a "long-drawn-out 'oo-o-o'" and would look quite pleased with himself. Freud and the child's mother believed that this sound represented the German word "gone". Freud noted that it was a

game and that the only time the child played with his toys was to play the game "gone". Finally one day he observed the boy throw his wooden reel with a string attached over the edge of the bed and exclaim "o-o-o-o" and then pull the reel back to the cot and exclaim joyfully "da" (there). Here was the complete game--"disappearance and return". The interpretation for Freud was then "obvious". The game..."was related to the child's great cultural achievement--the instinctual renunciation (that is, the renunciation of instinctual satisfaction) which he had made in allowing his mother to go away without any protesting."¹⁰ This game served as "compensation". Freud explained the boy's situation thus: "At the outset he was in a passive situation--he was overpowered by the experience; but by repeating it, unpleasurable though it was, as a game, he took an active part."¹¹ Freud says the child's behavior can be explained either as an "instinct for mastery" or by actively pretending and satisfying in play an impulse suppressed in real life to express his anger at his mother for her leaving him.

Freud makes two further points, first:

It is clear that in their play children repeat everything that has made a great impression on them in real life, and that in doing so they abreact the strength of the impression and, as one might put it, make themselves master of the situation.

Secondly,

...it is obvious that all their play is influenced by a wish that dominates them the whole time--the wish to be grown-up and to be able to do what grown-up people do.¹²

In play one can achieve the physically or morally impossible.

Freud (1920) considers children's play to be one of the earliest of the mental apparatus' "normal" activities. According to Freud, then, play: 1) fulfills the child's wish to be grown up; 2) is a "normal" activity of early childhood; 3) enables a child to create a situation which he would like to see exist; 4) is closely related to fantasy behavior; 5) gives an opportunity for the child to be master of a situation; 6) frequently involves repetitive behavior; 7) allows the child to actively release abreact emotions that were passively experienced or suppressed.

Robert Wädler (1933) examined and synthesized the psychoanalytic point of view. In summation, he described play, using these phrases: "instinct of mastery; wish fulfillment; assimilation of overpowering experiences according to the mechanism of the repetition compulsion; transformation from passivity to activity; leave of absence from reality and from super-ego; fantasies about real objects."¹³

Psychoanalytic studies concentrate on play that is unique and specific for each child. They are valuable for understanding each individual child, his development and problems and attempts at their solution. The psychoanalytic point of view regards play as a sign of the child's psychological situation. (Wädler, 1933) The psychoanalytic view of play has been further examined, explored, expanded and modified by those who followed Freud.

Psychoanalytic Aspects of Play

There is some general agreement from the psychoanalytic point of view on the various aspects of play (Axline, 1948; Erikson, 1950; Isaacs, 1929) and children's behavior.

Every behavior has meaning. Every person's behavior has meaning for that individual. As Erikson (1977) describes it is a "psychoanalytic proposition that every human expression means more than it seems to say--and much more than it is consciously intended to say--and that such meaning can be shown to have central significance."¹⁴ This assumption about the deeper meaning of all human behavior applies to children's play. For example, children's block constructions reveal themes which are central to their own personalities. (see p.88 below) (Erikson, 1950) Themes that may seem arbitrary to the observer are not. They are often repeated again and again.¹⁵ A clear illustration is found in Freud's case study described earlier. Play behavior is accepted as being revealing of a young child's central conflicts and issues; play is therefore an accepted and frequently used tool for working with the psychological problems of children. (Erikson, 1950; Axline, 1948)

Mastery/wish fulfillment. Child's play has the potential of mastery and wish fulfillment. (Biber, 1971; Erikson, 1950; Freud, 1920; Peller, 1971) Play provides the opportunity for the child to master reality through fantasy; a young child can be whatever he wants. He can fulfill any and all wishes; the child is omnipotent. As

Susan Isaacs points out, "All the things he may not do and cannot do in real life, he is able to do and be in this play world, which gives him a refuge."¹⁶ Play provides children with a chance to be in control, to be masters.

Safety of pretending/no consequences. In play, children can safely explore situations and reveal emotions without penalty. (Arnaud, 1974) "In play, one can act out various options and solutions that might be disastrous if carried out in real life--for instance beating up your sister. It is all pretend. There are no final irreversible consequences."¹⁷ The child can find "...a needed outlet for feelings and reactions that cannot be expressed so safely in any other way, and that bottled up could contort and abort his development."¹⁸ He can safely "kill" his father or mother by pounding clay and painting bombs without real consequence. As such, play provides a socially acceptable mode of acting out aggression and hostility.

Emotional release and therapeutic effect. Play provides for the release of pain and emotional turmoil. (Arnaud, 1971) It can provide an "outlet for complex and often conflicting emotions."¹⁹ Children are constantly facing new situations and all are at sometime afraid, perplexed and conflicted. (Isaacs, 1929) "The discharge in play of these inner tensions makes it easier for children to temper their behavior in real life."²⁰ Children's play assists children in mitigating, denying or temporarily solving a conflict. It can assist a child in overcoming a specific fear. (Peller, 1971)

A study released by the Arsenal Family and Children's Center in Pittsburgh (Brown, 1971) describes children's use of play to help relieve the anxiety and tension of a shared stressful experience. Play helped the children integrate and accept an accident they had witnessed. While the 3's and 5's were playing in the outside play area a workman fixing the light 20 feet up in the air fell from the bucket of the crane truck to the pavement below and was fatally injured. Since the children had already observed the accident they were not quickly huddled away but were allowed to watch the events that followed. (Brown, 1971). One mother who was an emergency room nurse provided medical assistance while the principal called the ambulance. Some of the staff got oxygen and blankets. In the following days, months, and for some children years, the staff worked with the children to support them in talking, dictating stories and playing about the accident.

The quality of the children's play and the extent to which the accident revealed itself in the children's play was reported to be consistent with their ages (i.e., "aggressive" themes at four; space and hospital play at five). The quantity and content of the play was definitely affected by the accident. The children returned to the themes related to the accident repeatedly and elaborated on it in their games. The fives would put on workman's hats and pretend to be hurt. This game had many variations, including a fireman, workman, spaceman, soldier in Vietnam and continued for months after

the accident. The boys continued to dramatically play out the incident for months longer than the girls. They reacted most intensely to the accident and they seemed to be the most affected. The five-year-old girls played or enacted themes related to the accident almost immediately. They played hospital...and their play came to include many victims including the soldiers and spacemen mentioned above.

The four-year-olds did not actually see the accident but they were present for the aftermath. School release time coincidentally followed the accident. The four-year-olds did not dramatize the accident for more than a month after it occurred and their initial play was fragmented and aggressive. One girl within the group, Candace, described as "the least well organized" was never able to come to terms with the trauma. She developed an understanding of the incident that was a combination of the truth and to a greater degree her fantasy of what happened. The other four-year-olds were eventually able to come to grips with the accident, although it took a month before they could externalize the experience. The three-year-olds were least able to assimilate the experience of the accident. It took one boy, Carl, two years to finally externalize, play out and assimilate the experience. Carl was three at the time of the accident and he gradually exhibited anxiety regarding all accidents. Eventually his fear generalized to a fear of windstorms and broken lights. The authors conclude that the "limits of fantasy and reality are less clearly defined for younger children and hence (are)

less manageable."²¹ It is noteworthy, however, that at the age of four and a half, Carl was able to reproduce the incident in dramatic play, in much the same way as the four-year-olds had done within a month after the accident. The authors conclude that in an era such as ours where the stress is constant yet varied, teachers and parents need to recognize that children are deeply affected by stressful events and that it is important for the children to successfully confront and assimilate them. Even if children are encouraged to forget or ignore such disturbing events they will not be really forgotten. Given permission and support to talk about and play about the experience, children can integrate the experience into their lives. From this, they learn not only how to cope with the one experience but also with the other stress experiences that they must inevitably face. Play activity allows for the release and working through of trauma. Playfulness transforms the activity into an act of renewal. (Erikson, 1977)

In play, children can actively assimilate and understand an overpowering experience. (Gilmore, 1971) Play allows the player to turn what was "passively suffered into a theme of active mastery."²² This holds true for the children in Arnaud's study. They were unable to react to the tragedy of the man's accident at the time of the incident. At the time, they could not begin to integrate all that they felt, but in the following months and for some, years they actively mastered the experience. (Brown, 1977) As Erikson states, "I

propose the theory that the child's play is the infantile form of the human ability to deal with experience by creating model situations and to master reality by experiment and planning."²³

Imitative play in the case where an object or what it represents is feared can have the effect of lessening and binding the fear. Play in this case can both lessen anxiety and aid the child in coping. (Anna Freud, 1936) Play helps children to cope; to deal with and understand difficult experiences. (Evans, 1974) Erikson describes this as "something in the nature of childhood play that is therapeutic in the deepest sense."²⁴

Repetition. According to the psychoanalytic viewpoint repetition or playing the same game or theme over and over again is characteristic of children's play. (Freud, 1929; Peller, 1971)

By representing a traumatic experience and by returning to it again and again or perhaps reversing its outcome in play, the young child is better able to deal with life's real problems. (Garvey, 1977) Freud's "little boy" who played the game "gone" over and over in reaction to his suppressed feelings about separating from his mother is an example of repetition and the role it plays in reducing trauma. (Freud, 1920) Typically each child also repeats the same, central theme or inner conflicts in his block constructions; themes that are central to the individual child's personality, growth and development. (Erikson, 1977) Repetition may result in a working through or assimilation

lation of the problem. (Erikson, 1977)

Learning about the world. Play offers children the opportunity to learn "about the world by playing about it."²⁵ In play, children can test and try on any possible situation or outcome. According to Erikson,

The play age offers the child a micro-reality on which he can use toys (put at his disposal by those who sanction his play) in order to relive, correct and re-create past experiences, and anticipate future roles and events with the spontaneity and repetitiveness which characterize all creative ritualization.²⁶

Empirical Study

To date, there have been very few empirical studies performed in the area of play theory, although this is very likely to change in the years ahead. J.B. Gilmore (1964) did tests of the infantile dynamics of the play theories of Piaget and psychoanalysis. Basing his research on Piaget's concepts that novelty predisposes children to play and that play is an inherently pleasurable experience for children, Gilmore hypothesized that "children would prefer to play with toys that were somewhat novel for them, as opposed to simple toys." In addition, he hypothesized that "anxious children would prefer to play with novel toys over simple toys less than would non-anxious children, but would prefer to play with toys relevant to the source of their anxiety more than non-anxious children."²⁷ He conducted three studies, the first of which was observational. The "anxious" subjects were children hospitalized for tonsillectomies. Control subjects were matched by age and were observed in their school. The

results

...strongly supported the hypothesis that anxious children prefer anxiety relevant toys more than non-anxious children. All children preferred the novel toys, however, and there was no evidence to support the hypothesis that non-anxious children would prefer novel toys more than anxious children.²⁸

The second study randomly assigned subjects to anxious or non-anxious conditions. The study used auditory and visual pain. The results again showed that anxious children prefer anxiety relevant toys. There was no evidence to support the hypothesis that anxious children prefer novel toys less than non-anxious children. All children generally preferred novel toys over simple toys. The third study was designed to check the results of the auditory fear group in the second study. The results of this study were seemingly opposite to those of the second study. However, there was a suggestion that the degree of anxiety differed in the two groups and that perhaps the third study's subjects were made anxious. Gilmore suggests that Erikson's theory of "play disruption," when fear becomes too intense, might be applicable. He postulates that the anxiety-relevant toys in the third study were too frightening for the anxious subjects.

There were two conclusions drawn by Gilmore from the results of all three studies. The first is that a child's toy preference for novel or simple does not change appreciably due to anxiety level. Novel toys were preferred by all of the subjects. This is consistent with Piaget's theory of play. The second is that the presence of anxiety affects children's toy preference. This finding supports the psycho-

analytic theory of play. These results, as Gilmore notes are only a beginning in the scientific evaluation of play theory which will broaden in the years to come. (Gilmore, 1971)

Developmental Stages of Play

Psychologists and researchers in the area of child development generally ascribe to the thesis first set forth by Stanley Hall (1906) and again later by Freud (1920) and Piaget (1962) that children go through observable stages of development. This section will review some of those developmental stages and examine their relationship to play and learning. (Hall, 1906; Freud, 1920; Piaget, 1962)

It cannot be overstressed that the early childhood years are a time of fantastic growth. (Erikson, 1950 and 1977; Freud, 1920 and 1925; Garvey, 1977; Gesell, 1968; S. Isaacs, 1929; Scarfe, 1963)

Since "play is most frequent in a period of dramatically expanding knowledge of self, the physical and social world, and systems of communication; we might expect that play is intricately related to these areas of growth."²⁹ Elaborating from a more biological point of view Gesell said,

...the brain grows at a tremendous rate during the pre-school age reaching its mature bulk before the age of six and the mind develops at a corresponding velocity. The infant learns to see, hear, handle, walk, comprehend, and talk. He acquires an unaccountable number of habits fundamental to the complex art of living. Never again will his mind, his character, his spirit advance as rapidly as in the formative pre-school period of growth. Never again will we have an equal chance to lay the foundations of mental health.³⁰

It is curious and worthy of note that "throughout history"

the importance of early growth has been "ignored, repressed" and yet "mythologized."³¹

This period of fantastic growth breaks down into stages. "We can," says Garvey, "discern patterns of amazing regularity and consistency." The "origins of most aspects of play can be detected in the earliest contacts of the child with his parents or caregivers."³² The early stages of play are established in the parent-child relationship during the first 18 months. (Sutton-Smith, 1971b)

The infant's scanning search with his senses, and above all, his eyes, and that his renewed recognition of what is continuously lost and found again is the first significant interplay (later to be re-tested in such games as, say, peekaboo.)³³

Although there is general agreement that there are stages of childhood development, there is no corresponding agreement as to the number, length or classification of stages of play. Some researchers define the stages of play by causes, others utilize instincts, while still others define by chronological age, physiological age, mental age and environmental situation. (Hurlock, 1971) Many of the researchers believe that the transitions between the stages are flexible from child to child and are "gradual and often barely perceptible."³⁴ After examining more than eighty research studies, Hurlock synthesized their work and "arbitrarily" developed her own four stages of development that range from birth to twenty-one.

The first stage is "babyhood play," and covers the period from birth to 3 years. The types of play include

repetitive sensory and motor experimentation, imitation of events and activities in the immediate surroundings and, beginning at age two, imaginary play, the beginning of dramatic play. Most play up to two years of age is solitary or with parents. Three-year-olds begin to play with other children. (Hurlock, 1971)

The second stage is called "childhood play" and encompasses ages three to six. Some of the traits of "babyhood" carry over into this period but it is generally more complex and developed. Imaginative, imitative and dramatic play "relating to living conditions, animals and family relationships" is common. Play testing large muscle skills and construction is typical. Blocks, sand, doll corner and art materials are favorites. Toys are used in dramatic play. The length of time spent playing in any particular mode increases. Social play becomes increasingly important while solitary play declines but does not disappear.

The third stage is "play of youth," and usually occurs from ages six to twelve or thirteen years. There is, at this point, a gradual transition from "childhood play" to "play of youth." Within the third stage, imaginative play is important in the early years. Interest in team and competitive games awakens and gains importance later. Collecting and having pets, which were of minor interest during the second stage, is very popular. Dolls representing adults, not children, are frequent play materials. Friends or peers become very important. Groups or gangs develop at about ten and

climax at fourteen years of age. (Hurlock, 1971)

The fourth stage Hurlock calls the "play of adolescence." The age range is from twelve to twenty-one. There are fewer scientific studies of this period. It is characterized by interest in organized athletic games with "strict rules and regulations, and attending mores." There is less interest in "game play," collecting, (particularly for boys) imitative and dramatic play. (Hurlock, 1971)

Criteria or Components of Play

Each observer of play has his or her own "definition" of play. The definitions sometimes overlap, often differ and are rarely consistent. Because play is such a broad term and is used to describe such a wide variety of behaviors, it is generally agreed that it is, at best, difficult to define. As Erik Erikson so aptly and almost painfully put it in his book Childhood and Society, "Play...in its own playful way, tries to elude definition."³⁵ Although a basic definition has yet to be agreed upon there are a number of criteria and components of play which occur with some degree of regularity in the various theories and definitions. Interestingly, many of these criteria are also used to define criteria of learning. It is not necessary for all of these criteria to be present in order for "play" to be taking place, but in some cases, it is possible to find all of them. This section will examine these components and criteria of play.

Repetition. Repetition, which is a component of the psychoanalytic theory of play is also characteristic of all

theories of play. (Biber, 1971; Elkind, 1974; Erikson, 1977; Evans, 1974; Garvey, 1977; Gross, 1963; Johnson, 1933; Moffitt, 1972; Sutton-Smith, 1971; Van Camp, 1972) Repetition in play is part of the testing process and also involves variation. Children play "house" or "family." One day Mommy is well, while the next "day" she is sick. This variation within the same sphere of play gives children the opportunity to find out how the two situations are similar, how they are different and what the possible or contingent effects might be. (Biber, 1971)

S. Isaacs (1929) emphasized the importance of repetition as a factor in play.

The infant of about one year practices, over and over, the sounds which will presently become words and the words he is just learning to use. The older child's pleasure is to climb, jump, run, skip, throw a ball and repeat endlessly the movements which will develop the strength and agility of his legs, arms and fingers.³⁶

In the area of block play, repetition is also cited as an important play component. Children repeatedly use the same patterns in their buildings. (Johnson, 1933) For example, they often build enclosures and towers, frequently with some slight variation. Some children build with care, while others throw their structures together. "Whichever method individual children choose, the general tendency toward repetition is universal."³⁷

According to Piaget, it takes the repetition of a behavior or an action in order for that experience to become integrated into the child's schema or understanding of the world. (N. Isaacs, 1960) As the child repeats an experience

he makes an accommodation or revision in his schema. Thus, as the child experiments with pouring water from one container to another he learns about its properties, which might include such concepts as: water falls down, pour it quickly it will splatter, pour it slowly it makes a thin stream, pour it fast it makes a thicker one, etc. Through repetition, these concepts are eventually integrated into the child's "permanent schema."

Children are continually encountering events that for them are unprecedented. They need time to add the "unprecedented" to their understanding of the world. "Play repetition," says Peller "provides essential, possibly indispensable steps towards concept formation." 38

Children may take longer than adults think or expect to completely master a task. For example, although a child may be toilet trained at 2-1/2, he may still be having occasional accidents at 5 years. Certain tasks require a great deal of repetition in order for them to become part of the permanent schema. (Elkind, 1974) Francis Hawkins (1969) discussed how important it is for young children to have the opportunity for repeated experience with the same materials. Her book is a detailed record of her weekly visits to a class of deaf four-year-olds, in which she utilized science materials. She found that introducing too many new materials too soon could be confusing and distracting for the children and could dilute the experience. The opportunity to use a material over and over again with some variation gives children

the necessary and important chance to find out that this material behaves consistently. (F. Hawkins, 1969)

Hutt (1971) on the other hand, has studied exploration and believes that the repetitive quality of play, being similar to drill, can prevent learning. "Indeed, by being repetitive, play is by definition a highly redundant activity and can actually prevent learning..." 39

Construction. Construction is defined as putting things together into a whole and as such is a component of play. (Erikson, 1950, 1977; Johnson, 1933; Sutton-Smith, 1971b) Construction in play is part of learning. The City and Country School in New York City which opened its doors in 1914 bases its curriculum on the belief that construction in play is important to learning. Unit blocks are the core material of their curriculum.

Blocks are a flexible and adaptable material that offer the possibility of many varied learnings. By building with blocks children have the opportunity to synthesize in a microcosm. Caroline Pratt, founder of the school, wrote of one young boy as she observed him,

Michael was so deeply absorbed...he might have been a scientist working out an experiment in a laboratory... with blocks to help him, he was using all his mental powers, reasoning out relationships...and drawing conclusions. He was learning to think. 40

Complaining that construction has received "only incidental attention in elementary schools," Sutton-Smith calls for increased adult nurturance and fostering of construction play. 41

Testing. Testing is a component of play. (Arnaud, 1974; Biber, 1971; Erikson, 1977; Evans, 1974; F. Hawkins, 1969; N. Isaacs, 1960; Sutton-Smith, 1971a) Erikson says,

Play means to test the leeway allowed by given limits; to outdo and yet not escape gravity. Thus wherever playfulness prevails, there is always a surprising element, surpassing mere repetition or habituation, and at its best suggesting some virgin chance conquered, some divine leeway shared.⁴²

Testing is trying on various alternatives which lead to different outcomes and is thus a part of learning. (Biber, 1971; F. Hawkins, 1969; N. Isaacs, 1960; Sutton-Smith, 1971a) It allows children to, "experiment with possible options and solutions and to get others' reactions to these..."⁴³ It lets children "experience, by trial and error, ways in which they are able, or not yet able to solve the problems of life."⁴⁴

Testing in play is a forerunner of abstract thought. (Garvey, 1977) It gives children the experience of manipulating, combining and extending associations between things. "Play," says Garvey, "may heighten the ease with which new approaches or ideas can be adopted towards diverse materials."⁴⁵ This flexibility towards materials--pretending a variety of possibilities--facilitates later abstract thought. Learning flexibility is good preparation for coping in our constantly changing world.

Testing is a precursor to the adult approach to thinking: "prediction." (Sutton-Smith, 1971b) An example of prediction is the child who says, "I can climb that tree and I won't fall." In doing this, the child is saying "what can I do" or forecasting, as he will do later on in adulthood.⁴⁶

Since testing in play is an integral part of the learning process, it must be fostered and encouraged in both the school and the home. Testing in play will require greater attention in the future on the part of parents and teachers alike if it is to thrive. (Sutton-Smith, 1975)

Exploration. Exploration is another frequently occurring component of play. (Collard, 1972; Garvey, 1977; Hawkins, 1974; Hutt, 1971; S. Isaacs, 1929; Sutton-Smith, 1971(b)) In exploration the child is asking what properties an object possesses and what it can do. He examines and observes things and objects on their own terms. Exploration is characterized by the child pausing, giving his full attention, looking, feeling, examining and touching the object.

Children go through four phases in play: a) exploration, b) manipulation, c) practice and d) repetition. (Garvey, 1977) The phases following exploration: non-exploratory behaviors or "other" behaviors, are characterized by repetitive movements, handling objects without looking and using the object for some other purpose. (Garvey, 1977)

Exploration, as an observable behavior can be seen in infants. Exploration, as defined by Collard (1972), is "that behavior in which infants expose an object to their sense organs and thereby learn about its properties such as smell, taste, color, shape, texture, size and weight."⁴⁷ Exploratory behavior includes looking at, rubbing, poking, turning and mouthing an object and includes throwing handling and banging.

Exploratory play adds to the child's general knowledge and is part of normal development. (S. Isaacs, 1929)

The healthy, happy child is constantly exploring everything around him--first of all with his mouth, then later, with active touch. He pulls things to pieces, and pokes about to see what is inside. He turns the taps and pulls the books from the shelves...⁴⁸

Random exploration in play, or exploration without direction is valuable. (D. Hawkins, 1974) It provides the child with an endless variety and combination of materials that can be exploited and incorporated into their world. For this reason, D. Hawkins emphasizes the importance of exploratory, or what he calls "random 'Monte Carlo' exploratory" behavior.⁴⁹

However, according to Hutt (1971) exploration and play are distinct from one another. In exploration, Hutt found that children concentrated, and "all receptors were oriented toward the object."⁵⁰ During the next phase, the transition from exploration to "play," the facial expression was more relaxed. In contrast, the play stage is described as "non-chalant." Hutt observed,

In all children once active investigation had commenced it generally proceeded vigorously, all aspects of the objects being explored. It was only once the children had apparently learned all there was to know about the object that it was incorporated into play activities and any further learning was incidental.⁵¹

Imitation. Imitation is also a component of play. (Abernathy, 1974; S. Isaacs, 1929; Smilansky, 1968; Sutton-Smith, 1971) To imitate is to copy or duplicate the behavior of others. Young children imitate the people in their lives. Commonly, parents are children's first models. (S. Isaacs, 1929) Children identify with their parents. They give their

allegiance to their parents and try to duplicate their attitudes, ideals and behaviors. This identification is fundamental to imitation. (Smilansky, 1968)

Imitation as a behavior emerges gradually. First, children copy the role model--only if he is present. Later, children may reproduce the behavior hours or days later even if the model is not present. This is called "delayed imitation." (Garvey, 1977)

Imitation is the earliest role playing. Its basis is found in identification. (Smilansky, 1968; Sutton-Smith, 1971) "That all role playing has its roots in this identification is shown by role choices of children which are mostly sex-typed and include mainly behavior aspects admired by the child!"⁵² There are different phases to imitation at different ages in children's development, beginning with imitation of a "present person" and developing into pretend and then the more highly developed socio-dramatic play. (Smilansky, 1968; Sutton-Smith, 1971(b)) "The early forms of imitation are rather static portrayals of one role and do not have the much more interactive revolving reciprocity of socio-dramatic play." ⁵³

Imitation is also part of the process of assimilating the objects and people in the world around him. Imitation is the first step in this process. In imitating, the child repeats a behavior he observes, thus assimilating an internal knowledge and understanding of that behavior. (Pulaski, 1971)

Imitative behavior is a precursor to the correspond-

ence theory of truth. (Sutton-Smith, 1971a) Sutton-Smith says of imitation that, "you understand something when the form that you create corresponds to something else in the real world."⁵⁴

Self-directed/unique. Two additional and complementary attributes of child's play are that it is unique to each child and self-directed. (Biber, 1971; Erikson, 1950, 1977; Garvey, 1977; F. Hawkins, 1969; Johnson, 1933; Sutton-Smith, 1971(b), 1975) Self-directed means that the child chooses the activity and performs it to suit him or herself. This is described as the "exercise of voluntary control."⁵⁵ This self-initiated "child-directed" behavior is part of the learning process. (Biber, 1971) The child selects the activity and/or materials and does it for his own satisfaction. The activity "is not obligatory but freely chosen by the player."⁵⁶

If a teacher or parent selects or organizes an activity it has a different quality. As Ellis said, "It is not play if the course of the behavior is determined entirely by the leader. Play comes from the individual exercise of options among opportunities to complexify a private world."⁵⁷ This "self-directed" or "voluntary" criterion is necessary for a behavior to be deemed play. (Sutton-Smith, 1971a) In talking about exploration and testing, Sutton-Smith says, "Our preference would be for the view that either exploration or testing only become play when voluntarily undertaken."⁵⁸

The criterion of uniqueness means that the play behavior

is unique, in the same manner that each child, each person is unique, different and special. The unique quality of the behaviors that each child exhibits is an attribute of play. (Sutton-Smith, 1971(b)) In playing, all children will imitate but each child is highly selective in which behavior he or she imitates. (Peller, 1971) Children reveal themselves uniquely in their play. Given the same materials, each child will play in his own innovative, unique and self-initiated fashion. (Erikson, 1977; Garvey, 1977; F. Hawkins, 1969; Johnson, 1933) Francis Hawkins explains,

How a child selects and uses materials from the initial provisioning depends upon him and upon his unique store of experience. His behavior expresses his present and developing resources and concomitantly increases my understanding of how and what to plan with and for him and of how to respond immediately.⁵⁹

"Play with social materials," says Catherine Garvey, "is a reflection of the child's growing notions of the world."⁶⁰

Children's block structures reveal and reconfirm the unique and self-initiated quality of their play. (Erikson, 1977; Johnson, 1933) Each block structure any child builds is unique to him or her; it is different from any other. They reveal to the observer early unique individual differences.

"Early personality traits are plainly shown here," says Harriet Johnson.

There are children who from the first attempt to straighten their block edges and who do not try for perilous heights, seemingly able to judge when the last steady block is in place. There are those who fling their blocks together, not concerned with the perfection or stability of the structure.⁶¹

In their early play, children are already unique and initiate and act upon their own unique desires.

Spontaneity/joyfulness. Spontaneity and joyfulness are criteria of play behavior. (Arnaud, 1974; Biber, 1971; Ellis, 1972; Erikson, 1977; Garvey, 1977; Gross, 1963; S. Isaacs, 1929; Moffitt, 1972; Piaget, 1962) "Sheer exuberance," says Garvey, "is another seemingly universal characteristic of much playful behavior."⁶² In defining play she states, "Play is pleasurable, enjoyable. Even when not actually accompanied by signs of mirth, it is still positively valued by the player."⁶³

There is a relationship between the spontaneous and joyful qualities of play and the young child's desire to learn. (Arnaud, 1974; Ellis, 1972; Moffitt, 1973) Arnaud says that "play, by virtue of its spontaneous, highly enjoyable qualities for children acts as an energizer and organizer for cognitive learning."⁶⁴

Ellis concurs when he states, "...that education is coming to recognize that playful behavior is often motivated by an intense desire to learn accompanied by positive feelings of enjoyment..."⁶⁵ He goes on to raise the question "Why don't we teach as children seem to want to learn?"⁶⁶

Spontaneous and joyful play are also akin to the child being creative and self-directed. (Erikson, 1977) As Evans (1974) explained, "When play springs spontaneously children are most nearly whole because they are self-directed, open and creative."⁶⁷ Fun, spontaneity, joy and pleasure are com-

ponents of play.

Process as part of play. Play is process. (Arnaud, 1971; Dennis, 1970; Garvey, 1977; F. Hawkins, 1969; Sutton-Smith, 1971, 1975) Process is defined as the ongoing action or movement or the doing of an activity. In listing descriptive characteristics of play Garvey says, "Play has no extrinsic goals. Its motivations are intrinsic and serve no other objectives. In fact, it is more enjoyment of means than an effort devoted to some particular end. In utilitarian terms, it is inherently unproductive." (underlining mine)⁶⁸ It is the doing of the activity, not necessarily the product, that is important. (Garvey, 1977; Sutton-Smith, 1975)

The concept of process then indicates the actual time children spend playing in and of itself has value, without pointing to some product or result. (Sutton-Smith, 1975) There is a "widespread sense that play is useless. It seems to be useless because it doesn't yield a product." Sutton-Smith goes on to say that he believes play is "process oriented not product oriented."⁶⁹ He notes, however, that there is an ever widening body of support for this point of view: that the time spent playing is valuable. (Sutton-Smith, 1975) Theorists in the early 20th century took the viewpoint that play must be "preadaptive" or "some sort of rehearsal" or it would fail to be biologically understandable. (Sutton-Smith, 1975) In more recent years, Piaget has taken a similar stance that play is a manifestation of "all adaptive activity." (Piaget, 1962). Even more recently, Sara

Smilansky's study (1968) revealed that children who learn to play improve in their persistence in play, level of imaginative activity and verbal activity. Other reserachers are confirming similar results. Kindergarten children who are nurtured in their play show a dramatic increase in their imaginative play. (Freyberg, 1969) Both theory and research point to the same conclusion: the time and the process of playing is in itself valuable. (F. Hawkins, 1969)

Persistence and involvement. Playing involves persistence and involvement on the part of the player. (Garvey, 1977; Gross, 1963; Moffitt, 1972; Smilansky, 1968; Sutton-Smith, 1975; Van Camp, 1972) Persistence means sustaining an activity--staying with it. Persistence is one of Sara Smilansky's (1968) six defining criteria used in her study of socio-dramatic play. "The child persists in a play episode for at least ten minutes."⁷⁰ When children are playing they often reveal an intensity of involvement with the activity. (Gross, 1963; S. Isaacs, 1929) "Involvement" is included in Garvey's 1977 definition of play. She says, "play involves some active engagement on the part of the player."⁷¹ Mary Moffitt (1972) says, "Play is a medium for sustaining energy when a child becomes involved in working with materials and pursuing his ideas."⁷² The "total attention which children can give to a problem" is the way Sara Van Camp (1972) describes children's involvement in play.⁷³

Children are often accused of having short attention spans. They have short attention spans if they are not inter-

ested in an activity, but when they initiate and are interested in a play activity, they are both involved and persistent.

Safe space/no consequences. Play is a safe space for children--an activity carried on without the normal life consequences. (Arnaud, 1974; Bruner, 1972; Dennis, 1970; Dewey, 1913; Garvey, 1977; Reardon, 1974; Scarfe, 1963; Torrance, 1963) Play has no extrinsic goals. It is not evaluated or graded. The objective of play is internal--it is an activity carried on for its own sake.

Play, therefore, gives the player the opportunity to experiment with solutions and options without risking real life consequences. (Bruner, 1972; Reardon, 1974) This freedom from consequences enables the player to take a "non-literal" attitude towards the activity. (Garvey, 1977) "All play requires players to understand that what is done is not what appears to be. It is this non-literal attitude that allows play to be buffered from its consequences: in effect it permits play to be play."⁷⁴

This absence of external goals was crucial to Dewey's (1913) definition of play. He describes play as "a name given to those activities which are not consciously performed for the sake of any result beyond themselves; activities which are enjoyable in their own execution without reference to ulterior purpose."⁷⁵ This "no consequence" attribute of play means that the activity exists irrespective of past commitment or future goal.

Time for random thought is also a quality of the safe

space attribute of play (Torrance, 1963); time for children to think and draw their own conclusions about the world. The time need not be spent in a directed activity. There need be no end product. The fact of play's randomness is an important defining attribute.

Play is an "effective" behavioral system. (Garvey, 1977) It is a behavior functioning in relation to other systems. It has no specific behavior in its own right. Play's behaviors are "borrowed from other affective behavioral systems." For instance, an "aggressive-attack" pattern may be "borrowed." When this happens, the resulting behavior "resembles" a real attack but because it is in the play mode, the outcome is different. The play-attacker is not subject to normal consequences. (Garvey, 1977)

Opportunity for control. Another very important attribute of play is that it allows a young child a chance to be in control. (Biber, 1971; Erikson, 1950; S. Isaacs, 1929; Sutton-Smith, 1971, 1974, 1975) So many of the decisions affecting a child's daily life are by necessity made by adults--his parents and teachers. Play provides the one clear time that the child can be in control. It gives the young child the momentary power and opportunity to do anything. As Susan Isaacs states, "All things he may not do in real life he is able to do in this play world."⁷⁶

Play, in giving the opportunity for control, creates the chance for the brain to boss the body. (Erikson, 1950) The child learns to understand, to "master" his environment.

(Brown, 1971) A child can plan, judge and create a sequence of events. This is power. (Biber, 1971) In life, children are presented with a series of events and they must react. In play, they can be in control. As Sutton-Smith (1971b) explains it, a player can rearrange the components of stimulus and response in whatever way he or she wishes. "In thought, in image and in schema also there is a reversal of direction." In other words, "the tail now wags the dog."⁷⁷ The control lies with the player. This type of player controlled situation is called "adaptive inversion." It is "adaptive" because the child is fitting the events of life into his or her schema. (Sutton-Smith, 1975) It is inversion "because it changes the ordinary flow of control: it transforms the structure of the experience; it changes the characteristic of the emotion and it operates in a micro rather than a macro scale."⁷⁸

Play transforms experience into terms that permit player control. Once the player is in control, then the unique aspect of his/her own reactions can be played out. (Sutton-Smith, 1975) The child will often play out events similar to those in real life yet the manner in which he plays it out is unique to the child. (Sutton-Smith, 1972) As Freud explained, "We see that children in their play repeated everything that has made a great impression on them in actual life, so that they thereby abreact the strength of the impression and so to speak make themselves masters of the situation."⁷⁹ Children can establish conditions which they would like to

see exist. They can play out their wishes, hopes and fears. Within the safety of play they can experience, control and master life situations: painful and joyful. (Freud, 1920)

Opportunity for mastery. The opportunity for mastery is an attribute of play which affords children the opportunity to be successful. (Biber, 1971; Erikson, 1950; Evans, 1974; Sutton-Smith, 1971b) In play children can be whatever they want. It allows children to discover what they are like, how their bodies work, how they will behave in different situations. It gives them the opportunity to be in control, to be successful, to have a sense of well being.

A classic example of the "joy that comes from mastery" is illustrated by the experience of a young girl and her success of mastering the task of sawing a piece of wood--and the "glow of achievement" that followed. (Sutton-Smith, 1971b) Her teacher had suggested that it wasn't a good idea for her to try it but after some encouragement from Sutton-Smith's researcher, the girl made the attempt. She sawed away--and succeeded. "For the rest of the day she carried around this little piece of wood everywhere she went with a seraphic smile on her face."⁸⁰

Emotional release. Play provides the opportunity for emotional release. (Arnaud, 1974; Axline, 1947; Biber, 1971; Erikson, 1977; Freud, 1920; S. Isaacs, 1929) As reported at length earlier (see p. 14-18) in play children can work through inner tensions, fears, anxieties and trauma. Children can transform emotional conflicts into acts of renewal and self-understanding.

Challenge. Challenge is an attribute of play and learning that encourages children to test the limits of their abilities. (Eiferman, 1971; Garvey, 1977) Challenge occurs only if the amount of skill and understanding necessary to the play or game are within the grasp of the play but are not easy for the child. If present, challenge attracts the child to the activity. It is important, however, to differentiate between pushing children and encouraging them to stretch and reach to the best of their ability. (Bettelheim, 1969) Pushing children beyond their ability and endurance can have undesirable effects.

Challenge is an important ingredient of games with rules. (Eiferman, 1971) Eiferman, an Israeli researcher, believes that Piaget, in his examination of games with rules, has overlooked the role of challenge. She believes Piaget to be mistaken in his idea that "in games with rules there is an absolute equilibrium between assimilation to the ego--the principle of all play--and social life."⁸¹ According to Eiferman, Piaget says that games with rules are "wholly explicable" in terms of assimilation and social accommodation. Eiferman disagrees. She sees challenge as the all important and neglected ingredient.

Part III

DIFFERENT APPROACHES TO PLAY

DIFFERENT APPROACHES TO PLAY

This section will examine five different ways of viewing play: sciencing, symbolic play, socio-dramatic play, creativity and play and block play.

Sciencing

Play is analogous to the scientific process which includes a test and rehypothesis approach to thinking. (D. Hawkins, 1974; Lorenz, 1972) Dewey recognized the natural affinity between the scientific approach to research and the probings or explorations of children. (D. Hawkins, 1974) In both, there is time for exploration of how and why objects and concepts relate to one and other. In both sciencing and play there is time for children to problem solve and think for themselves. In play, children often naturally go through the steps of scientific method. They observe, hypothesize, test, check and rehypotheseize.

Teaching children a sciencing approach gives them a way or method to approach life situations. (D. Hawkins, 1974) Play is an integral part of the sciencing process. There are two necessary components to sciencing: 1) content or subject matter, and 2) scientific method. (Hawkins, 1974) In addition, there are three phases in sciencing: 1) "messing about"; 2) "middle game" guidance by materials and/or teacher as the child is messing about; 3) lecturing and discussing the theory either formally or informally. (Hawkins, 1974) "Messing about" gives time for autonomous exploration and play with the materials. Middle game

provides the necessary guidance and supports continued exploration. Lecturing and discussing gives rise to looking at deeper theoretical questions. "Theorizing in the creative sense needs the content of experience and the logic of experimentation (messing about and middle game) to support it"⁸² (my parentheses)

The children at the National Children's Research Center Science Camp, Washington, D.C. (Summer, 1975) approached problems scientifically. Their behavior could be simultaneously labelled "sciencing" and play. In play and in sciencing discoveries are made, noted, lost and later made again. In play there is "early and deep learning." "What is important is the confrontation with materials which play can exploit and incorporate."⁸³

Symbolic Play

In symbolic play the child designates some object or activity to represent or replace others. (D. El'Konin, 1971; Stokes, 1963; Herron Sutton-Smith, 1971) Word and object can be either joined or separated. The child operates with the meaning of the word substituted for the thing. (El'Konin, 1971; Sutton-Smith, 1971) There are two types of symbolic play. In the first type, symbolization in regard to objects begins at around 2 years of age, when signs and symbols appear that represent various figurative and cognitive schema. These signs and symbols find their derivation in early imitation. Before imitation is internalized it is symbolization in action. (Piaget, 1971) Symbolic play

cannot be "reduced to imitation." Imitation is one step in the development of symbolic play and in assimilation. (Piaget, 1971) In symbolization of objects the child substitutes or symbolizes one object with another. (El'Konin, 1971)

The second type of symbolization, symbolization with regard to activities or role playing, appears after symbolization with regard to objects. This is the assumption by the player of the role of another individual in which children reproduce actions they have observed. (El'Konin, 1971) Role playing can only develop if the child identifies with an adult which results from adult-child interaction. (El'Konin, 1971) In early role playing the activity is connected to a definite object. The child pretends to feed her doll using a real "adult" cup. This is an area of play in which there is a need for more research. (El'Konin, 1971; Garvey, 1977)

Studies of Greta Fein (Garvey, 1977) and Ia Z. Neverovich (Herron Sutton-Smith, 1971) both suggest that symbolic play develops through a series of phases. Originally the activity is connected to a realistic object such as the doll drinks from a cup. Later, children generalize the activity to a variety of objects and less realistic objects are used. A cardboard box can represent "the family's home." (Garvey, 1977) Imaginary objects also enter the play. (El'Konin, 1971) "Fein's study suggests that learning to engage in symbolic play progresses along a course from simple, single transformations to multiple and more complex ones. She con-

cludes that in early make-believe activities an anchor (or realistic support) is required."⁸⁴

The development of symbolic play is paradoxical. The older the children become, the more realistic and appropriate their play is. The overall plan of action is more important than the objects themselves. (Garvey, 1977) The action is more recognizable to adults. (Garvey, 1977) In the play of children 2-5 years of age, there could be two mothers in the same family, a situation that would not be found in the play of 3-4-year-olds. (Gross, 1963, 1974) The details of the older children's play are more realistic, but if an appropriate object is unavailable, a substitution is easily made, i.e. an iron is used as a teapot.

Adult intelligence is rooted in symbolic function. (Sponseller, 1974) Play leads to the development of abstract symbolization. (Arnaud, 1974) In symbolic play, children operate with meanings that are divorced from real objects and activities, using them in relation to some other real activity or real object. (El'Konin, 1971) Symbolic play at its most developed stage is socio-dramatic play. (Stokes, 1963, 1974)

Socio-dramatic Play

Socio-dramatic play or dramatic play represents a coming together of the different components of symbolic play; symbolism in regard to objects and role playing. (Stokes, 1963, 1974) It incorporates both symbolism and imitative behavior. (Stokes, 1963, 1974) In socio-dramatic play,

children suspend reality and adopt the state of "let's pretend." (Stokes, 1963, 1974) Theorists have viewed dramatic play primarily in three different ways. (Smilansky, 1968)

1. Diagnostically: as a tool to reveal the emotional and intellectual state of a child. (Erikson, 1950, 1977)

2. Psychotherapeutically: to use dramatic play as a form of therapy. (Axline, 1947; Freud, 1920)

3. Dramatic play has been used as a means to further the intellectual and social development of children. (S. Isaacs, 1929; Arnaud, 1974)

All three views are still prevalent today. (Smilansky, 1968)

Smilansky's work is important because it is an initial attempt to do comparative research in a previously neglected area. Working in Israel, Sara Smilansky studied the socio-dramatic play of preschool children. She hypothesized and proved that by intervening in and encouraging certain skills used in socio-dramatic play, you can successfully improve the quality of play. Children can be taught to play. The study resulted from an attempt to answer the question of why there is an ever-widening scholastic gap between the children of immigrants from Middle Eastern and North American countries and children whose parents come from culturally advanced countries. (Smilansky, 1968) Smilansky's study describes socio-dramatic play which she believes "has a very high potential for the promotion of the culturally deprived child."⁸⁵ If a child could learn to do socio-dramatic play he would learn skills important for scholastic

achievement. Smilansky developed six defining elements of socio-dramatic play for use in this study. The six elements are:

1. Imitative role play. The child undertakes a make-believe role and expresses it in imitative action and/or verbalization.
2. Make believe in regard to objects. Movements or verbal declaration are substituted for real objects.
3. Make believe in regard to actions and situations. Verbal descriptions are substituted for actions and situations.
4. Persistence. The child persists in a play episode for at least ten minutes.
5. Interaction. There are at least two players interacting in the framework of the play episode.
6. Verbal communication. There is some verbal interaction related to the play episode.⁸⁶

The first four criteria taken together define dramatic play. All six criteria are necessary for socio-dramatic play. Smilansky believes that socio-dramatic play has excellent potential as a tool for solving the problem posed by the culturally disadvantaged child.

By its very nature it demands from the child that he utilize his potential abilities and knowledge, combine his scattered experiences in a flexible way, in an almost life-like situation. In playing his role the child draws from the stock of knowledge acquired by observing situations and people. He expresses those experiences in action and verbalization. He engages in prolonged social interaction with his peers.⁸⁷

Smilansky observed distinct differences in the play behavior of disadvantaged children, children from underprivileged homes (D children) and socially advantaged children (A children). These were cultural differences. D children's play behavior is characterized by a lack of sequence in both their activities and conversation. "They tend to stick to one repetitious activity without elaborating it or to jump from one activity to another disconnected one."⁸⁸ There is also a great contrast between the behavior and attitudes of the D children's parents and the A children's parents.

From a very early age the privileged child is directly taught by the adults in his immediate environment how to collect scattered facts and weave them together into concepts, how to utilize them in problem solving, whereas the underprivileged child is left alone to form his concepts accidentally and to test their relevance to his problems.⁸⁹

The D child's experience has provided him with facts, experiences and vocabulary but it has failed in providing the skill of thought integration. A children generally do socio-dramatic play "naturally" without teacher intervention. D children rarely do socio-dramatic play. (Smilansky, 1968)

Smilansky and her team of researchers worked with five groups of teachers and students--groups A, B and C, totalling 420 children; group D (disadvantaged control) totalling 362 children; and group E (advantaged control) totalling 427 children. The children were observed for socio-dramatic play in the classroom and in outdoor play settings. The teachers involved in the study were trained to observe for the missing

elements of socio-dramatic play. They were also taught intervention techniques so that they could nurture the six elements of socio-dramatic play. They made every effort not to affect the content of the play. The teacher, once aware of which of the six components of a child's play was lacking, would intervene to try and develop the specific behavior. There were two kinds of teacher intervention:

- 1) participation within the play itself, and
- 2) intervention from the outside.

In the first, the teacher took on a role in order to offer suggestions. She became a "co-player." She might become a nurse and suggest to the mother that she bring her baby to the doctor. This would be an attempt to start interaction. In the second type of intervention, the teacher made straightforward suggestions, clarified the children's behavior, and/or established contact between players without taking on a role in the play. The thrust would be to improve the quality of the play through outside direction. The teachers received a great deal of support and training in developing these techniques. (Smilansky, 1968)

Smilansky reports that, at first, teachers resisted use of observation and evaluation techniques. They felt that if a child did not learn it was his/her fault, not the fault of the technique. However, after using observation and evaluation techniques, the teachers changed their minds. They appreciated the potential of these tools of observation, evaluation and intervention. This ability to observe and

evaluate was what Jenny Klein (1976) referred to in her symposium speech. She believes it is important that teachers, since they are professionals have the tools to evaluate their own work. Millie Almy, in her book Ways of Studying Young Children, supports Klein's idea and describes tools and methods. This part of Smilansky's study can be applied to all teachers including those in the United States. (Almy, 1959; Klein, 1976; Smilansky, 1968)

Smilansky used the following two treatments to foster socio-dramatic play:

- 1) "providing the children with more thorough observations and better understanding of their almost daily experiences." This was affected by guided trips, discussions, etc.

- 2) teaching children how to exploit their previous experiences by converting them into the raw material for socio-dramatic play as described earlier; teacher intervention. (Smilansky, 1968)

Group A was exposed only to treatment one--visits with discussion. Group B was exposed only to treatment two--teacher intervention. Group C was exposed to a combination--both treatments one and two. Groups D (disadvantaged) and E (advantaged) were control groups. These treatments were applied to three themes:

- 1) The clinic
- 2) The grocery
- 3) A theme based on a storybook Where is Ruthy?

Children were observed for use of those themes in their socio-dramatic play. Each theme was developed and studied for a period of three weeks.

Group C, which received both treatment one and two, had the most significant improvement in the level of play. Control group E--advantaged children--still had a significantly higher level of play than group C.⁹⁰ Smilansky indicates that once all the elements of socio-dramatic play are achieved they will continue to grow and improve through the play itself.⁹¹

This study shows that socio-dramatic play can be developed with teacher intervention. Children can learn socio-dramatic play. Socio-dramatic play inherently involves integrative thinking, use of language, concentration, social interaction and problem solving. (Smilansky, 1968)

Theoreticians concerned with play have reaffirmed that play takes place; it is natural. Smilansky has shown that play, at least socio-dramatic play, does not just happen or occur in all children. The qualities which compose it have to be nurtured, either by parents, as is the case with the "advantaged children" or by teacher intervention. Socio-dramatic play involves specific skills, which can be learned. Smilansky believes that the skills of social interaction and problem solving which take place in socio-dramatic play are crucial to later growth and learning ability. (Smilansky, 1968)

In research similar to Smilansky's, Freyberg (Singer,

1973) studied disadvantaged 5-year-olds in New York City with similar results. She found that low-class kindergarten children who received training in imaginative play improved significantly in the imaginativeness of their play. The effect of the training was shown to last for at least the two months following the training. (Freyberg, 1973) She did find, however, that there were some low-income children with a high predisposition to imaginative play. (Freyberg, 1973)

In a study comparing trained low-income high fantasy predisposition children to low fantasy predisposition children, (p. 145), Freyberg found that both the high and low fantasy improved significantly but the high fantasy children improved more. (Freyberg, 1973)

There was also high correlation between measures of imaginativeness and concentration. Freyberg suggests that the high fantasy group of her study correlates to low groups of middle class subjects and that the low fantasy group "represents that sub-group of lower class children who are particularly deficient in cognitive skills and who are very resistant to remediation."⁹² This study supports Smilansky, in showing that children can be trained, taught to improve their imaginary play. Further, Freyberg's study found that,

...the enhanced fantasy play proved also to be associated with greater verbal communication, longer and more complex sentence usage, more sensitive responding to the cues of other children, more apparent spontaneity, more creative use of play material, more inventiveness and originality, more labeling and increased attention span. There were also considerably more positive expressions of emotion in the trained than in the untrained group.⁹³

A number of studies done in the United States show that children from low socio-economic backgrounds engage in less role-playing, less pretend and symbolic play.⁹⁴ Burton White, Ph.D. reported that middle class children engage in role-playing behavior five times more frequently than lower socio-economic class children. Home visits revealed that middle class mothers interacted and engaged in pretend play significantly more with their children than "over-worked and overwhelmed mothers (usually lower class mothers) who do not have much time to interact with their children" and almost never engage in make-believe or pretend play with their children.⁹⁵

Rivka R. Eiferman (1971) also working in Israel, did a large scale study of the playground and after school activities of children (aged six to fourteen) in the kibbutz, town and village from both advantaged and disadvantaged and Jewish and Arabic families. Eiferman disagrees with Smilansky's claim that disadvantaged or culturally deprived children (mostly from Middle Eastern or North African countries) do not develop the ability to engage in symbolic play.

(Eiferman , 1971) Studying children slightly older than Smilansky's, Eiferman found that make-believe play with social themes appears later (in children over 5 years of age) in the socially disadvantaged children. The evidence is as yet inconclusive, but it appears that symbolic, pretend, and socio-dramatic play may appear later in culturally disadvantaged children. (Eiferman, 1971; Freyberg, 1973; Garvey,

1977; Smilansky, 1968; Herron, Sutton-Smith, 1971) The results indicate a need for more in-depth research into the incidence of symbolic, pretend and socio-dramatic play.

Studies so far reveal that children can be taught to improve the level of their imaginary or pretend play. (Freyberg, 1973; Marshall and Hahn, 1967; Singer, 1973; Smilansky, 1968) Improvement in pretend or imaginative play correlates to increased verbal communication, problem solving ability, concentration, and positive affect. (Freyberg, 1973; Garvey, 1977; Marshall and Hahn, 1967; Smilansky, 1968)

Creativity and Play

Creativity and play have many attributes in common. (Dennis, 1970; Garvey, 1977; Scarfe, 1963, 1974) Creativity is a uniquely human process by which a person, through divergent thinking, problem solving, and hypothesis testing, evolves something unique or novel. It is the ability to produce uncommon and remotely associated responses. (Guilford, 1959; Torrance, 1963)

E. Paul Torrance (1963) who has done extensive work with creativity in education, defines creativity two ways:

- 1) creativity as a unique experience for the individual, and
- 2) creativity as a unique experience for all men. Creativity covers a broad range including each adaptive act and those extremely rare experiences which result in unique discoveries, earth-shaking scientific breakthroughs. He says, "it is my own preference to define creativity in terms of the process of sensing problems or gaps of information, forming ideas or

hypotheses, testing hypotheses and communicating results."⁹⁶

An act or thought that is new and unique for a particular individual can be considered creative. (Torrance, 1963) Creativity need not be defined in terms of its uniqueness or novelty as it relates solely to society. It also can be a personal process that satisfies the creator.

There are many similarities between the qualities of play and creativity. (Biber, 1971; Dennis, 1970; Garvey, 1977) Both must be nurtured and supported by parents and teachers. (Torrance, 1963) Each involves problem solving. In both play and creativity, it is the process itself, not necessarily the end product that is important. (Dennis, 1970; Torrance, 1963; Sutton-Smith, 1975) In both, it is important for the teacher or significant adult to be open and flexible. He must not interfere with the content. Both require a relaxation of ends, freedom of action and exploration. (Sutton-Smith, 1975) Barbara Biber (1971) describes the link between play and creativity. In both there is... "a tendency to toy with ideas, to see patterns in data, the capacity to be puzzled, to sense ambiguities, to discriminate."⁹⁷ "Play is essentially creative and often artistic," notes Scarfe. He goes on to comment that "...most of Einstein's works would have been dubbed play."⁹⁸

Socio-dramatic play, in particular, shares many qualities of creativity. In fact, socio-dramatic play is a creative activity that involves divergent thinking, problem solving, exploration. (Smilansky, 1968) The process, not

necessarily the product is important, particularly when looking for creative aspects of play.

In Teacher, Sylvia Ashton-Warner talks about creativeness and destructiveness. She says, "I see the mind of a five-year-old child as a volcano with two vents: destructiveness and creativeness. And I see that to the extent we widen the creative channel, we atrophy the destructive one."⁹⁹ In Smilansky's studies of socio-dramatic play, she found that the A children (socially advantaged) who can do socio-dramatic play are creative.

They problem solve by discussion. They tend not to fight. To relieve a tense situation or problem, the advantaged children:

- 1) laugh;
- 2) criticize the role not the person;
- 3) show very little overt aggression (rarely saw hitting, biting, cursing, tantrums).

D children (from culturally disadvantaged, underprivileged homes), on the other hand, tend to have one leader--an autocratic figure. They solve problems by:

- 1) laughing at the other person;
- 2) criticizing the other person (not his actions);
- 3) showing open aggression(hit, curse, bully, willfully interfering with one another). (Smilansky, 1968)

Smilansky's advantaged children, who do socio-dramatic play, tend to be creative--not destructive--while the disadvantaged children, those who do not do socio-dramatic play

and are not creative, do exhibit overt aggressive behavior. (Smilansky, 1968) There is a parallel between Smilansky's research and Sylvia Ashton-Warner's observation about the relationship between creativity and destructiveness. Smilansky further reported that the children in groups B and C, those who received treatment two and both treatments one and two respectively exhibited less overt aggression as their level of play activity increased. She says, "there were fewer signs and outbursts of aggression in the nurseries and kindergartens of this group."¹⁰⁰ This further supports Ashton-Warner's belief that as creativity increases, destructiveness decreases. (Ashton-Warner, 1963)

The relationship between creativity and children's playfulness was studied in 93 middle class kindergarten children from 5 kindergarten classes in 3 New York City schools. Lieberman (1965) found a significant relationship between playfulness and ability on several creative tasks. (Freyberg, 1973; Herron, 1971)

The children who were rated as more playful were also better at such tasks as: a) suggesting novel ideas about how a toy dog and a toy doll could be changed to make them more fun to play with; b) giving novel plot titles for two illustrated stories that were read and shown to children; and c) giving novel lists of animals, things to eat and toys.¹⁰¹

Lieberman suggests a relationship between spontaneity and original playfulness, cognitive styles and creativity. This relationship has been defined as divergent thinking. (Freyberg, 1973)

The notion that creativity is facilitated by a playful

atmosphere is also supported by a study done by Wallach and Kogan (1965). They found that if they gave their creativity tests in a relaxed, game-like, playful environment, free from the usual pressures of testing situations, that the resulting creativity scores were indeed significantly separate from conventional intelligence test scores. This indicates that creativity is different from conventional intelligence and it is facilitated by a playful environment. (Wallach and Kogan, 1965)

This link between creativity and play is another area which deserves further scientific examination. (Smilansky, 1968; Sutton-Smith, 1971a) There are many shared attributes between the two: problem solving, divergent thinking, process, open-ended exploration, flexible thinking and the need for a nurturing and supportive environment. (Biber, 1971; Garvey, 1977; Torrance, 1963)

Block Play

Block play is a microcosm of all play. It has all the qualities of play plus some that are unique. The orientation of block play is process not product. Its goals are therefore intrinsic to the play process. (Johnson, 1933; Sutton-Smith, 1975) Unit blocks were developed by Caroline Pratt, a teacher at the turn of the century who was dissatisfied with the classical teaching and educational system. She saw education as a life-long task, and conceived of education as a "...an exploration into the world of children and their ways of growing and learning." Pratt believed

"that in the process of children's play was the germ of serious learning, indeed a major rehearsal for the tasks awaiting them in growing up."¹⁰²

Unit blocks are pieces of wood which Pratt maintained remained wood until infused with the information and experience of a child. They are sturdy construction materials which have intrinsic limits. The basic unit is a brick shaped block (1-3/8" x 2-3/4" x 5-1/2") made of elm or maple. All the other blocks are in proportion--there is a half-unit square, double unit rectangle and quadruple unit rectangle. There are also quarter units, triangles, cylinders and ramps, all are in geometric proportion (1/2 or doubles to the original unit). (Hirsch, 1974) They are limited by their shapes, by the quantity of blocks and the space available in which to work.

Blocks are a material through which children learn by their own actions. (Hirsch, 1974) They learn how shapes fit together and how they balance.

Block play is construction, putting separate pieces together into a whole. Play constructions are the experiential formulations of the child's inner world expressed externally. (Erikson, 1977; Sutton-Smith, 1971b)

Repetition, a characteristic typical to all developing children whether they be learning how to talk, walk or eat, is also characteristic of block play. Children construct the same patterns over and over again, with some variation as their block building skill increases, but the original

basic patterns--towers, enclosures and bridging are always repeated. Repetition is a consistent characteristic of block play. (Johnson, 1933; 1966)

Exploration and testing are also characteristic of block play. In the block building process children are continually asking questions. "How may I build this higher? How will this block fit here? What must be done to keep this from falling?"¹⁰³ They are testing and exploring, making predictions and testing and seeing what results. Although the child does not know that the force interacting among the blocks of his structure is a concept known as the "center of gravity", he does know and learns to predict that towers of a certain height and stability will stand but one more block and it will fall. There is the possibility of experimenting with pattern, form, rhythm and design. (Hirsch, 1974; Moffitt, 1974)

In block structures, children imitate. They imitate the techniques and constructions of their peers and they imitate the larger world around them. Harriet Johnson, writing in New York City in 1933, notes, "Henry's building strikes a commonly accepted pattern in general movement, the larger base narrowing to the slender, terminal tower, quite in unrecognized acceptance of New York's set-back fashion."^{104a} Another child builds a structure and names it the Empire State building which Johnson notes is "almost inevitable, since Manhattan is dominated by the vertiginous piece of architecture."^{104b} In block play, children imitate the

building models and structure based upon their own experience. (Johnson, 1933; Sutton-Smith, 1971)

Each child is unique. Even though they are using identical materials, each child's structures are unique. Pratt's original concept of play and blocks as a play material was based upon the idea that each child would work from their own unique reservoir of experiences. (Winsor, 1974) Harriet Johnson notes that even in the earliest constructions, early personality traits are visible. "There are children who, from the first, attempt to straighten their block edges and who do not try for serious heights, seemingly able to judge when the last steady block is in place."¹⁰⁵ In block play, a child makes decisions as he selects and transforms the material into his own unique structure. "How a child selects and uses materials from the initial provisioning depends upon him and his unique store of experience. His behavior expresses his present and developing resources." ¹⁰⁶

The spontaneity and joy of play is certainly observable in block play. The look of delight as the child successfully balances one last block on her tower is an example. Children work spontaneously and energetically with blocks. They are a very satisfying material. (Hirsch, 1974)

Block play is a process. It is the process of building --what fits, what doesn't--that is important. Children need time and space for this process to ensue. Through the process of building, repeating, stacking, testing, fitting blocks together, children play.

Block play, like other forms of children's play, is not subject to the consequences of real life. Children are free to test and try on and experiment. Within a supportive environment, children feel free and safe to experiment with solutions and options, to enact or dramatize their feelings and desires. (Erikson, 1950; Garvey, 1977)

Given the limits of the materials, the room and time allocation and the rules (blocks may not be thrown), children have the opportunity for mastery in block play. The child has the power to control the building. He may build what he wants and how he wants. He builds for his own satisfaction. There is the opportunity for mastery, for success many times over. There is no right or wrong way to build with blocks. A child may discover a better way than one previously used. He may discover that he can build a higher or sturdier building by constructing a sturdier or more balanced base. This is part of an on-going discovery process, but his less sturdy building of yesterday was in no way wrong. In this, there was a continuing possibility for mastery. Children know and experience their own abilities and power in building. It gives them a sense of "I can do it". This is mastery. (Erikson, 1950, 1977; Johnson, 1933; Sutton-Smith, 1971b)

Block play constructions can serve a place for emotional release. Children can play out their past experiences. Child psychologists use blocks in play therapy. The themes of children's play constructions are often central to their own life.

Longitudinal studies have shown that themes revealed in block play constructions, made as children, have remained central to the persons as adults. In block play, children have control, they can play out their feelings in any way they wish. (Axline, 1947; Erikson, 1950, 1977)

Not surprisingly, block play like other children's play goes through definite developmental stages. (Johnson, 1933) Children, 2 years old, begin by carrying the blocks with them from place to place. During this pre-building phase children become familiar with the material. Between the ages of two years old to five or six years old, children pass through different stages of using the materials. The stages that follow carrying are: 1) towers and rows--stacking blocks vertically and horizontally; 2) bridging--setting two blocks the right distance apart so that the third will fit across; 3) enclosures--putting four or more blocks together so as to completely enclose a space; 4) patterns--building in rhythmic, aesthetic patterns; 5) naming--giving the structure a name; 6) representation--using earlier modes of building to represent or symbolize some experience. Repetition is characteristic throughout each of the stages. No two children will go through the stages in exactly the same sequence just as no two children will build in precisely the same manner. (Erikson, 1950, 1977)

Children who are introduced to block play in later years or around 5 years old, will still pass through these

same stages. The whole process may take much less time, but they still go through each of the stages. (Johnson, 1933; Hirsch, 1974)

All of the above would likely not occur without a supportive environment created by a nurturing parent or teacher. (Hirsch, 1974; Johnson, 1933)

The potential learnings from block play cover the entire range of childhood growth. In science, there is the opportunity for trial and error, inductive thinking, discovery, properties of matter, structures, weights, balance, stability and gravity. In math, one deals with numbers, order, fractions, classifications, measurement, volume area, shape symmetry mapping, equality, inequality, more, less and the list continues. Social studies incorporates the learnings of mapping, people and their work, interdependence of people, and symbolic representation. The art learnings of block play include among others, rhythm, balance, patterns and design. The language art learning possibilities are also varied: questions about concepts, discussion of ideas, planning, building, naming and writing stories about the building, shape recognition, size relations, labeling, etc. Through social development, children may learn to cooperate with each other, respect each other's work, and feel successful and competent. In physical development, children can improve their eye-hand coordination and visual perception. Something as basic as clean-up can give a child the experience of cooperating with others. One-to-one correspondence

matching shapes, physical dexterity and language skills. (Anker, 1974; Hirsch, 1974; Starks, 1974) Block play is indeed a microcosm of all children's play with the potential for many learnings.

Blocks are a valuable play material for children from toddlers to adolescents. The material can be used in an ever-increasing variety of ways. As children grow and the way in which they play changes, blocks can grow with them. Toddlers stack blocks one on top of the others, young adolescents build cities and develop dramatic and written stories about their structures. (Johnson, 1933)

Part IV

THE RELATIONSHIP BETWEEN PLAY AND LEARNING,
COGNITION, KNOWLEDGE AND KNOWING

THE RELATIONSHIP BETWEEN PLAY AND LEARNING,
COGNITION, KNOWLEDGE AND KNOWING

Work versus Play

Society has for ages demeaned, devalued and overlooked the role of play in children's development. (Arnaud, 1974; Erikson, 1977; Reardon, 1974) "Adults through the ages have been inclined to judge play to be neither serious nor useful... and therefore not applicable to central human tasks," says Erikson.¹⁰⁷ Play is valuable experience and should be seriously considered. (Scarfe, 1963)

Some have tried to use the quality of seriousness or non-seriousness to define play versus work. If an activity is serious, it is defined as work; if it is not serious, it is considered play. This criterion is difficult to accept after observing children playing. Children are very serious about their play. (Erikson, 1977; Scarfe, 1963)

This attitude of work as "serious and good" and play as "not-serious and bad" is supported by the Puritan ethic and has created a false dichotomy between work and play. Using the work versus play criterion to define play has several inherent difficulties. First, the two are mutually exclusive semantic labels--an activity must be either work or play. Second, the work/play dichotomy is obfuscating. Work and play have some attributes in common: seriousness, involvement, persistence and enjoyment. (Arnaud, 1971)

Early childhood educators, says Spodeck (1974), feel the need to justify a serious concern about play by twisting play around and calling it something else, thus obscuring our real concerns. They can take play seriously only by calling it something else. Saying "play is the work of the child" and therefore equating the two allows us to be serious about play. "If play is legitimate," says Spodeck, "then it needs to be accepted in its own right without confusing issues."¹⁰⁸ Play is too often viewed as a recreational activity rather than serving important educational functions.

Humankind has played emotional games "in assuming that childhood is all play and make-believe (and therefore the cradle of all poetry as well as all irresponsibility), while adults are serious and factual," says Erikson.¹⁰⁹ The events which occur in each individual's childhood are crucial to his adult life, and to relegate the events of play to a lesser status is to deny not only play's importance but the importance of the childhood experience.

Society in the past has all too quickly dismissed play behavior and consequently dismissed and demeaned childhood. How often does one hear "oh, he's just a child"--with the implicit assumption that the child and his feelings are unimportant? Are they not meaningful? (Elkind, 1971; Scarfe, 1963) Both D. Elkind and S. Isaacs strongly emphasize that children's feelings are indeed important. In fact, they feel that children are more like adults in their feelings

and emotions and less like adults in their thinking. (Elkind, 1974; S. Isaacs, 1929) As Susan Isaacs says, "His (the child's) efforts and successes and failures are as earnest and important to his mental life as those of the golfer, the business man, the engineer, the artist are to them."¹¹⁰

David Elkind makes the point succinctly: "Young children are most like us in their feelings and least like us in their thinking."¹¹¹

Learning Through Internalization of Action

Children learn, integrate and internalize concepts sooner and easier by actively using and playing with materials, than by approaching them abstractly. (N. Isaacs, 1960) Children do not possess the abstract thought and versatile symbolism with words that adults do. For adults, thinking is a way of acting that respects the laws of reality. Thinking is test-acting. (Freud, 1920) Adults can think through a problem. They can try on various solutions, while children cannot. (Peller, 1971) Much of children's play is "a crude kind of test of action." Play is the route to learning to think abstractly; it is a "substitute for reasoning."¹¹² Play involves some kind of active engagement on the part of the player. (Garvey, 1977) Children are literally active learners. "What children acquire through active manipulation of the environment is nothing less than the ability to think."¹¹³

Children learn more when they can handle and manipulate three-dimensional objects. (Moffitt, 1972) As chil-

dren play, they develop basic structures (Piaget would call them schema) or referents that they can use as they encounter new situations. (Bruner, 1960; Piaget, 1962)

If children do not have the opportunity to play, they may fail to develop some intellectual abilities. For example, pre-school age children, who due to illness or other reasons, fail to have broad sensory-motor experience, may not develop certain percepto-cognitive information in the same way as they grow. (Moffitt, 1972)

If children learn by their actions, what do they learn by doing a workbook sheet? Gold and Grand (1974) described a workbook sheet in which a child is instructed to make an X over the pictures that "do not belong to the rest." 114 If the child was able to correctly select the "right" picture, he could evidently listen, understand and follow directions. The child who marked some pictures correctly and some incorrectly may have 1) copied a friend; 2) worked randomly; 3) may have difficulty with visual discrimination; 4) may not have heard or understood the teacher's directions. At any rate he did not learn anything from the sheet either. It cannot be concluded that he learned anything from the exercise because his learning took place before he marked the sheet. The only people to learn anything are the adults: teachers and parents. "At best, giving the children worksheets provides the teacher with a quick assessment tool to find out which children have mastered a particular skill." 115

Doing worksheets does not teach children discrimination--

it might teach them how to sit still, or how difficult it is to sit still or how to follow directions. Children learn by doing, by experiencing. They would better learn how to discriminate by sorting real objects. (Gold, 1974)

In a British study of middle class day care children, Kathy Sylva attempted to distinguish between the effect on the solution of a task of prior manipulating of the object as opposed to watching an adult demonstrate the object or receiving training. (Garvey, 1977) All the children were given verbal standardized hints. "Prior free handling," says Garvey, "led to more subsequent activity,...to somewhat more systematic step-by-step procedures; and to more effective use of hints."¹¹⁶ Watching the "amusing demonstration" and "receiving training" were both fairly ineffective. The prior free handling, manipulating, actively playing with the object resulted in better problem solving. (Garvey, 1977) Children learn by their actions. They learn about the world by playing about the world. (Biber, 1971)

Problem Solving and Learning

Children learn to problem solve through play. (Anker, 1974; Arnaud, 1974; Stokes, 1975) Children discover that there is no pre-set way to work through a problem. In play, both the initiation and the resolution comes from the child. They can, either working alone or with others, play out or test a variety of solutions. (Arnaud, 1974)

Problem solving through play is analagous to using

reasoning to work through a solution in the sense that both require imagination. In both, one picks out elements of reality and varies them, combining and recombining until they fit together in a way that is satisfactory. Though thinking is quicker than acting, decisions made in play can be "instantaneous." Thinking, like play, gives the space to safely try out ideas. Like thinking, the outcome of play has no consequence in the real world. (Peller, 1971)

Play and Cognition

Play and games contribute to learning, particularly cognitive learning. (Moffitt, 1972; Neuman, 1971) This is supported by research, some of which has already been touched upon in the preceding sections on learning as internalized action, symbolic play, socio-dramatic play and creativity, motion. (Freyberg, 1973; Smilansky, 1968) In summary it has been shown that training and intervention in imaginative play can improve the cognitive development of young children. (Freyberg, 1973) Children trained in socio-dramatic play developed improved skills of communication, concentration, problem solving, integrative thinking and social interaction. (Freyberg, 1973; Smilansky, 1968)

The modes of categorization of lower class black children were compared to those of middle class children. (Siegel and McBane, 1967) Unlike their middle class peers, the lower class children were unable to function on a representational level. Siegel and McBane theorized that a well-

developed cognitive structure which can assimilate new experiences is required for children to understand objects and their symbols. (Stokes, 1975)

A study of preschool ghetto boys compared the level of cognitive competence to the organization and quantity of imaginative play. (Borowitz, 1970) Correlative data indicated that there was a significant correlation between the quality of verbal articulation, organization and quantity of imaginative play and the level of cognitive ability. The researchers concluded that the child's ability to deal with the world competitively correlated directly with the organization and content of the child's play. (Stokes, 1975)

The above research indicates there is a relationship between play, games and cognitive development, but that it is only a beginning. There is a real need for continued and in-depth research. (Sutton-Smith, 1971)

In two articles, Mary W. Moffitt (1963, 1974) examined how specific play behaviors related to specific cognitive skills. Working with Rita Swedlow she developed this chart:

Reading Skills

Visual and auditory discrimination
Percepto-motor skills
Hand-eye coordination
Ocular efficiency
Ability to shift from whole-part and reverse
Figure-ground discrimination
Body image-laterality/directionality

Related Play Activities

Music, rhythms, running, jumping, creeping, dramatic play, fitting objects into other ones, taking things apart and putting them together, throwing, catching, pasting, using puzzles.

Sorting and matching; using discrimination of size, shape, color, sound, smell, taste. Ordering objects or placing them in sequence of length, height, etc.

Science Skills

Observing, comparing, describing, classifying, hypothesizing, testing.
 Development of spatial relationships of size, shape, position, distance.
 Shift from whole to part and reverse.
 Hand-eye coordination.

Related Play Activities

Selecting and identifying properties of matter through sensory discrimination. Fitting objects into things, taking objects apart and putting them together. Constructing with wood, blocks, etc. Using manipulative materials. Ordering and grouping of objects.

Mathematic Skills

Matching one-to-one correspondence.
 Grouping (sets), classifying according to size, shape, color, number, etc.
 Seriation or sequencing of objects.
 Whole-part discrimination (fractions, ratio)

Related Play Activities

Using manipulative games of all kinds. Matching and sorting materials. Taking things apart and putting things together and construction of all kinds. Playing with blocks noting equivalence, balance, etc.

Writing Skills

Visual discrimination.
 Hand-eye coordination.
 Grasping as part of motor development.
 Spatial orientation--noting size, shape, distance, direction, etc.

Related Play Activities

Painting, pasting, using clay. Constructing with wood, blocks, etc. Using manipulative games, puzzles. Involvement with motor activities of all kinds.¹¹⁷

The chart shows the relationship between play activities and developing academic and cognitive skills. (Moffitt, 1974)

It is apparent that many play activities are closely related to the skills necessary for academics. No other medium has been discovered to replace play. "We eliminate these activities at our peril."¹¹⁸ Children's play is the germ of

serious learning, a rehearsal for the adult tasks awaiting young children. (Winsor, 1974)

Piagetian Theory of Play and Intellectual Development

The eminent Swiss child psychologist Jean Piaget believes play to be an indispensable part of the child's intellectual development. (Elkind, 1974; N. Isaacs, 1960; Piaget, 1960) Much has been written by and about Piaget in the area of children's intellectual development. This writer will not attempt to cover all of Piaget's ideas and theories but will, in this section, focus on Piaget's theories as they relate to play and learning.

For Piaget, play is the essential prerequisite "for all intellectual activity."¹¹⁹ The central idea of Piaget's research is that the child's own action is the starting point of his intellectual growth. (N. Isaacs, 1960) Children learn, understand and achieve intellectual mastery through their own intense interactions with their environment. These interactions take different forms at different ages. From infancy onward the child, through his own play and his own action, develops his schema and continually revises it. Thought, therefore, is essentially an external action that is internalized. "All concepts are derived first from the action and then from the operation, which is another way of saying that concepts are the expression of assimilation by schemes of transformation."¹²⁰ By playing with and acting in his environment, the child transforms his external actions into concepts or schemes. (Piaget, 1971)

According to Piaget, the individual is continually striving to find an equilibrium between himself and his environment. (Stokes, 1963) This is accomplished by two processes: assimilation and accommodation, which occur at all age levels and levels of mental development. (Elkind, 1970; Stokes, 1963) Assimilation is the process of absorbing and organizing incoming information so that it can fit into the already existing structure of knowledge or schema. It is the process by which a person internalizes and processes information he receives based on information he already possesses. For example, if a child has a pre-existing schema of dog he can identify a four-legged, barking animal which is new to him as "dog." He can assimilate or fit it into his existing schema or concept of dog. (Elkind, 1974; N. Isaacs, 1960) Material or experiences which are familiar to a child's already existing schemes are easily assimilated.

Some situations do not readily fit the already existing patterns or concepts. For instance, what would happen if this child, whose concept of a dog is a "four-legged animal who barks," encounters a Basenji (a kind of dog who hardly ever barks). The child will be unable to assimilate a Basenji into his existing schemes. The child must then adjust his concept of "dog" to include dogs that do not bark. The operation is called accommodation, which occurs when a person adjusts or modifies his present mode of knowing to include a novel concept, thus developing a new schema. (Elkind, 1974; N. Isaacs, 1960; Piaget, 1962; Pulaski, 1971; Stokes, 1975)

It usually takes repeated experience with an event or concept before an accommodation becomes a permanent part of a person's schema. (N. Isaacs, 1960)

Equilibration is the resolution or balancing between the operations of assimilation and accommodation. It occurs when a person has accommodated and then assimilated a concept, event or occurrence. Equilibration is accommodating and assimilating life's events so that the person has an integrated understanding. (Elkind, 1974)

Piaget explained, "The role of play seems clear. Play is an exercise of action schemes, and therefore part of the cognitive component of conception."¹²¹ He goes on to say that, "At the same time, however, play manifests the peculiarity of a primacy of assimilation over accommodation which permits it to transform reality in its own manner without submitting that transformation to the criterion of objective fact."¹²² "Play," says Piaget, "is essentially assimilation or the primacy of assimilation over accommodation."¹²³

Play is essential to intellectual development. It is a way of repeatedly practicing skills and experiences previously acquired, through accommodation. (Eiferman, 1971; Piaget, 1962; Stokes, 1963, 1974) In play, children can reenact past experiences. (Eiferman, 1971) In his own way, his own time and place, each child can play out both experiences and skills and in this way assimilate them.

Piaget stresses that children learn through their own actions. They learn by active doing, by playing. The child

is an organism continually interacting with his environment. He is working to develop increasingly complex schemes or understandings in order to fit himself into his environment socially, intellectually, emotionally and physically. (N. Isaacs, 1960) According to Piaget, "...all concepts are derived first from the action and then from the operation, which is another way of saying that concepts are the expression of assimilation by schemes of transformation..."¹²⁴

In discussing the educational implications of Piaget's theory, Nathan Isaacs stresses the importance of using concrete play materials which are meaningful to children. Concerned specifically with rudimentary math learnings, he believes that understanding might "come sooner and more easily and might develop much further if most of our laborious and unmeaning school lessons were replaced by activities in which the children themselves wanted to find out something."¹²⁵ Isaacs suggests the use of play materials similar to those used by Piaget in his experiments: "beads to be strung into necklaces, flowers and roses to be matched to one and other, sweets to be divided up between morning and afternoon," etc.¹²⁶ Children will understand the concept of number by playing with it and experiencing it concretely. Isaacs points out, however, that the materials must be at the child's level of development. They must be meaningful to the already existing schema. (Gilmore, 1971; Isaacs, 1960) Piaget's work has shown that verbally learning the rules of math or logic is of little import compared to the "...complex

functional structure which has to be built up in our minds."¹²⁷

Piaget divided children's play and intellectual development into stages: 1) Function play or sensorimotor period; 2) Symbolic play or pre-operational period; 3) Games with rules or operational period; 4) Abstract thought or formal operations. (Elkind, 1974; Garvey, 1977; Pulaski, 1971; Stokes, 1963, 1974) Although he assigned specific ages to each stage he was careful to point out that each child will pass through these stages at his own rate; the ages are to be viewed as indicative age ranges, not unyielding markers. Piaget believes that a child must pass through these intellectual stages in order, as intellectual growth or developing schemes is a building-on process. (Elkind, 1974; N. Isaacs, 1960)

The first stage, sensorimotor play, lasts from infancy to two years. The child is concerned with recognizing objects, learning that they have permanence, repeating and varying sounds and motions, learning to control his movements, recognizing different events and expecting them to take a particular course. Peek-a-boo is a favorite pastime at the sensorimotor age. He takes pleasure in mastering movements and in exploring the world of sight, touch and sound. He is excited when he can make events recur. He is assimilating and accommodating, developing and modifying his initial schema. He learns by actively doing and trying. (Elkind, 1974; Garvey, 1977; Isaacs, 1960; Stokes, 1975)

Symbolic or representational play is present from two

to six years of age. In this stage, the child uses signs and symbols to represent various schemes, both figurative and cognitive. Symbolism develops from imitation, and imitation is a symbolic signifier in action. As a child repeats a motion, he is imitating it and he is also symbolizing or representing it. It is not yet internalized, but it is symbolized in action. (Piaget, 1971; Pulaski, 1971)

The child develops the ability to represent his experiences in code. He can recall the image of an event. He uses one object to symbolize another, to represent eggs in a nest he fills a doll's hat with marbles. (Elkind, 1974; Garvey, 1977; Isaacs, 1960) By the age of four and five the symbolic play becomes increasingly social. Children will agree on symbols. This is known as "collective symbolism." (Pulaski, 1971)

The third stage of play is games with rules, which usually take place from ages seven to eleven. The child acquires so-called concrete operations, actions that are internalized, so that what the child previously did actively can be done in "his head." For example, in one experiment Piaget showed 5-, 6- and 7-year-old children six sticks and asked them to take the same number of sticks from the pile. By matching the sticks from the pile one to one, the younger children were able to solve the problem. The older children just picked up six sticks in their hands. They could count in their heads mentally and therefore did not need to match the sticks one to one. In games, by following the rules and mentally knowing the rules, the child has begun to inte-

grate social concepts such as competition or cooperation. He can play games with objective rules. He has revised and re-revised his schema, integrating new concepts into the total structure. The sensorimotor and preoperational (symbolic) stages must precede this stage of games with rules. The final stage of development is abstract thought, or formal operations, which occurs from ages twelve to fifteen. Adolescents can "think about their thoughts," reason about and plan for the future and can consider "contrary-to-fact propositions." (Elkind, 1974) Adult intelligence is rooted in symbolic function, the use of symbols to represent an object or another symbol. Piaget calls this operational process abstract thought. (Sponseller, 1974)

Play is the product of the inherent stages of thinking from infancy to adulthood and from an initial egocentric point of view to an adult objective rationalistic point of view. Infants are initially egocentric but as they progress through the stages they become more social and other-oriented. In contrast to the egocentric adult, who can take another person's viewpoint but does not, the egocentric child cannot yet take on another person's point of view. It is an indication of his intellectual immaturity. (Elkind, 1974; Gilmore, 1971) The materials and concepts children are exposed to must be geared at the level of understanding of the child. A child at the sensorimotor stage of development cannot yet understand representational play. Teachers must try and meet each child where he is in terms of development. What

the child brings to the interaction is a crucial element in what will occur. (Arnaud, 1974; Isaacs, 1960) Teachers must lead and guide children, valuing the child's own active interest and active thought. In this way, past development leads to future development. "All the way through, further integration can only be built upon effective past integration."¹²⁸

Each of these stages is built upon a foundation laid by its predecessor. In order for a child to use an object as a symbol, he must first know that it is permanent. (Isaacs, 1960) Play leads the younger thinker from active learning to representational thought. (Sponseller, 1974) "True learning is not only by doing but also by understanding."¹²⁹

Key Elements of Play Basic to Thinking

In play, children develop approaches to thinking that are the basis for adult thinking. (Biber, 1971; Jolly, 1972; Lowenfeld, 1935; Herron, 1971) "Play is the basis for all later cognitive functioning and is therefore indispensable in the life of the child..."¹³⁰ Early interactions prepare the child for the kind of interactions he will have later in life. The young child's play "...may become the basic substance out of which he lays down his life patterns..."¹³¹ A good example of this would be Dutch children, who are frequently left alone, with the exception of concentrated interaction with their mothers at feeding time. This concentrated interaction prepares the child for a single close relationship later on. In contrast, Israeli kibbutz children learn to function in a group. They are not as tuned into subtle

mood changes and they will carry this trait into adulthood.
(Bettleheim, 1969)

There are parallels between the manner in which adults approach life and children approach play. Approaches to play--imitation, exploration, testing and construction--are precursors of four theories of knowledge or modes of knowing: correspondence, causal, predictive and coherence. (Sutton-Smith, 1971b and 1972) Sutton-Smith's research implies a functional relationship between games and cognitive styles.
(Herron, 1971)

The four modes of knowing are also modes of play. The first mode is imitation, modeling or copying the behavior of a model. As infants, children imitate their parents and by two years of age, children can imitate a model without the model being present. By ages four to six, imitative play takes the form of social games, including the house, cars or trucks. Imitation parallels the "correspondence" theory of truth. "You understand something when the form you create corresponds to something else."¹³²

Imitation is one of the early manifestations of intelligence and learning. (Piaget, 1962) It is part of the process of accommodation. (Piaget, 1962)

The second mode of thought, exploration, can be thought of as a precursor form of "causal analytic understanding." (Sutton-Smith, 1971b) In this mode, children explore, examine and analyze their world. As infants, they explore their own hands and feet. By two and three years old they are discov-

ering the connections between themselves and objects, places and people. There is a "congruence between the ancient epistemological theory of how people establish truth and children's own exploration."¹³³

Testing, the third mode, is like prediction. (Sutton-Smith, 1971a and 1971b) (See earlier discussion, p.28) It is similar to science's causal analytic approach. It "... emphasizes the subjective world and its possibilities."¹³⁴ In testing, children have an "I can do it" attitude. The child makes a prediction when he says "I can climb that tree and I won't fall."¹³⁵ This is similar to the forecasting or predicting that he will do as an adult. (Stokes, 1975; Sutton-Smith, 1971b)

Construction, the fourth and final mode of knowing, is the analog of adult planning. (Erikson, 1950) Construction or "world building" involves synthesis or putting things together. Children understand their environment by synthesizing things in their own way and they use toys, dolls and blocks as substitutes for real objects. Construction of young children is similar to the coherence theory of truth. (Sutton-Smith, 1971a and 1971b) As all the pieces fit together, so do the facts. The child's construction may be imaginary, but it has real meaning for him. The constructions of the young child are preparation for the synthesizing and planning he will do as an adult. The four modes of play--imitation, testing, exploration, construction--prepare children for adult thinking.

Crosscultural studies of children's play revealed that the four modes occur in all cultures, but in varying forms. For example, studies of the Eskimos and Australian aborigines have revealed that large portions of their play time was spent in "testing out their skills with objects and against the environment."¹³⁶ In these cultures, "self-testing is an area where a repertoire of potential variety is a survival necessity."¹³⁷ The testing in their play prepares these children for their adult life. Low income children in our society show "high levels of social integration and performance" in self-testing. In the area of constructive and socio-dramatic play, they do not do as well. They lack variety and playfulness. Exploration, self-testing and imitation are universal play activities, but among construction (model-making), socio-dramatic play (including imaginary characters), and contesting (games), there are definite cross-cultural differences.

Educators can and should provide for all types of play. (Sutton-Smith, 1975) "Play transformation," says Sutton-Smith, "has a definite knowledge function in human development...there is some optimal level of play participation, which contributes to the subject greater autonomy, greater enjoyment of life, a greater potential repertory of responses, and a greater potential flexibility in use of these resources."¹³⁸

In today's world, ever-increasing in its complexity, flexibility is an important and necessary ability. (Sutton-

Smith, 1975) Play gives children the opportunity to learn to be flexible. Play is the area in which the child gains an adaptive capacity for varied behavior. (Sutton-Smith, 1975) "When a child plays with particular objects, varying his responses with them playfully, he increases the range of his associations for those particular objects. In addition, he discovers many more uses for those objects than he would otherwise."¹³⁹ "Play," says Ellis, "is concerned with the development of capacity to deal with change."¹⁴⁰ Play prepares children to be flexible and adaptable, a requirement for our complex modern society. (Ellis, 1972; Sutton-Smith, 1971a and 1975)

Children have a special form of control or mastery over the events of play which enables them to practice and discover their own unique thinking. Play has been called "adaptive inversion." (Sutton-Smith, 1975) It is adaptive because the player modifies the situation to suit himself.

Play is "inversion" because "it changes the ordinary flow of control; it transforms the structure of experience; it changes the character of emotion; and it operates on a micro- rather than on a macroscale."¹⁴¹ Sutton-Smith qualifies this definition, noting that it stresses the novel character of play and neglects the repetitions or ritualistic quality of play. (Sutton-Smith, 1975) He sees children's play as a continuum. Each child plays uniquely but begins with "repetitive" play which allows him to integrate or familiarize himself with the new toy. For example, the

child pulls the truck behind him on a string. Later he will "combine" it with other toys and situations; he fills it with sand and empties it. Finally he will "transform" it into an imaginary situation. He becomes the driver of the truck. (Sutton-Smith, 1975)

Children's play, and specifically their play constructions, represent themes which are central to their lives. (Erikson, 1950, 1977) Their constructions can reveal their conscious or unconscious knowledge of their life situations. Erikson (1950) cites an instance where a young girl revealed in her construction her knowledge of something of which she was supposedly unaware: her own terminal illness. "She constructed the only ruin built by a girl and put in the center of her scene a girl who miraculously returned to life after having been sacrificed to the gods."¹⁴²

Play constructions give children a place to assimilate and synthesize their world with society at large. "The play construction, then, can be inventively negotiating between the small builder's inner universe and his society's changing view." ¹⁴³

Children's play reveals themes and ideas that remain significant throughout life. (Erikson, 1977) Longitudinal studies done by the Institute of Human Development of the University of California have revealed that 20-, 30- and 40-year-old adults still experienced as adults "remarkable thematic closeness to content and the form of the play constructions which in a few minutes they had put on a table for me when they were twelve years old." ¹⁴⁴

Part V

ENVIRONMENTAL FACTORS AFFECT PLAY AND LEARNING

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The environment--the materials, surroundings and attitudes of adults, parents and teachers--all directly affect the quality of the play and learning process. (Frank, 1963; Herron, Sutton-Smith, 1971; Hawkins, 1969; Isaacs, 1960; Sutton-Smith, 1971 a&b, 1975) Play results from the interaction of the child and his environment which provides the child with the information necessary for his intellectual growth. (Ellis, 1972; N. Isaacs, 1960; Piaget, 1960) The quality of the environment is a crucial factor to this process. If children are nurtured and encouraged in their play it will thrive and conversely if they are discouraged play is likely to be extinguished.

Schools

Nearly all children start out the first day of school with enthusiasm, excitement and interest. (Herndon, 1971) Somewhere along the way the individual child's own unique excitement and interest is lost. What do we teach our children? How to read? How to solve complex problems? How to think for themselves? Or, how to "survive"? How to be quiet and sit at "your desk"? How to stand still on line? How to please the teacher? It is the job of the schools to provide an environment that will continue to stimulate children's interests. (Guilford, 1967) This is a major criticism of American schools, that they have intrinsic qualities that work against their very goal of stimulating, exciting and interesting students in learning. (Herndon, 1971) For example, the labelling of children as slow or fast learners

leaves no room for the child to work at his own pace. The effect on the child's self image and his interest in reading can be very harmful if, for example, by the first month of first grade he is already labelled a slow reader, in the slow group. He is beaten before he begins.

Many experts and educators have become concerned that children are learning how to be part of a group--to lose themselves. They are treated as groups, not as individuals. Children learn to please the teacher instead of themselves, to be "other directed" or "teacher directed" not self-motivated. An "other orientation" may be very successful in a school or institutional setting, but it does not teach a young person that he is responsible for his own life and the direction that it takes. (Elkind, 1974; Herndon, 1971)

Schools and teachers can create environments that encourage self motivation and self responsibility.

Adult Effect

Corinne Hutt (1971) studied the effect of the presence of an adult on the exploratory behavior of children that is elicited by novel objects. Her results indicated that the presence of a familiar adult in the room made the children more adventurous and less apprehensive of novelty. In contrast, "the children who were by themselves showed more neophobia and even when they did approach the object, their early responses were tentative."¹⁴⁵ It appears that when children are comfortable in a situation through the presence of someone familiar to them, they play with increased success.

Parent/Caretaker Effect

Collard (1972) studied and compared the exploratory behavior of three groups of infants, aged 9-13 months, from different environments: from an institution, from low-income homes and from privileged homes. She found that "the number of patterns of exploration and play in a baby's response repertoire appears to depend on the variety of objects he has played with and on the patterns of social play he has learned with other persons."¹⁴⁶ (underlining mine) Institution reared infants who spend more time in their cribs, who are not played with as much by adults and who were exposed to fewer novel objects showed "fewer patterns of exploration and play than home-reared infants did."¹⁴⁷ They also showed less social play, more stereotyped play and fewer fine motor skills. Collard suggests this is because they were confined to their cribs and had "little of interest" going on around them. The infants from the privileged homes, where their mothers spent more time with them, showed more patterns of exploration than did the infants from low-income homes. These results support the value of child/parent or child/caretaker interaction and the importance of exposing young children, even infants, to a variety of materials.

In a 1968 study by Levenstein, toys and books were given to disadvantaged mothers of preschool children. In addition the mothers were trained to foster their children's play, to talk with their children as they played and to act as an agent of their children's cognitive growth. This inter-

vention resulted in a "dramatic increase in the IQ and verbal intelligence scores of the children."¹⁴⁸

Sutton-Smith (1972) also discussed the reinforcement value of parents playing with their children. He says, "there is evidence that children who make believe are more likely to have parents who have played sensory-motor games (peek-a-boo) with them, which is to say provided them with models to play transformations."¹⁴⁹ Parent interactions with children increases the quantity and quality of play.

Teachers Effect

The role of teachers, then, is very important. They must create by their actions and attitudes an environment that encourages children's interest. (Arnaud, 1971; Smilansky, 1968) Teaching calls for "subtle leadership" to support play. This leadership requires a serious commitment to first, "constructively increase the options" open to children so that the outcomes are not easily predicted. Secondly, the teacher or facilitator must continually be thinking to the future to help find new directions to help the child work towards his own development. (Ellis, 1972) In talking about teachers as facilitators, Sara Smilansky says that "the goal of education is the facilitation of learning."¹⁵⁰ Her own research (Smilansky, 1968) on socio-dramatic play and disadvantaged preschool children in Israel showed that teachers' facilitation and actual participation in socio-dramatic play significantly improved the level of play.

Feitelson and Ross found that "one of the most impor-

tant factors towards creating a successful play teaching session was to have the play teacher continue by all means a flow of active connected play." Teachers' questions like "What do you want to play?" or "Look at this nice car, where is it going?" were found not to facilitate play. Results indicated that the play must already be established (either by the teacher or child) and then the child "might be able to draw on his own experience and contribute a first suggestion."¹⁵¹ Children can then be assisted to improve the level and quality of their play. (Feitelson, 1973; Smilansky, 1968)

In examining the specific role of the teacher, it was determined that the teacher cannot establish or create play. The role for the teacher is that of creating a supportive environment and providing options.

A comparative study was done to see if "lower class kindergarten children who receive training in imaginative play will play more imaginatively" than the control group.¹⁵² The training took the form of eight 20-minute training sessions over the period of a month. The experimental group improved significantly in the imaginativeness of their play as well as in the expression of positive affect and in the degree of concentration shown in their play. The control group did not change. The children were observed for two months after the training, during which the experimental children continued to display an improved level of imaginative play. The effect of the training appeared to remain with the children. (Freyberg, 1973)

The question, then, is what the training sessions specifically provided for these children. The answer, according to Freyberg, is that the children already had the potential for this more varied and complex play, but that they lacked the "specific play techniques" necessary to fulfill this potential. The adult models, or facilitators, met this need. She cites Smilansky and points out that "there are certain behaviors that must be learned by means of adult intervention at particular points in a child's development."¹⁵³ (my underlining) Middle-class children are more likely to be exposed to such models because "of the value placed on the advice of child-care books in the middle-class home, the presence of fewer children, earlier reading experience, as well as the middle-class mother's perception of her role in training the child."¹⁵⁴ Modeling and direct teaching by adults can be very effective at particular points in a child's life as a catalyst to develop already existing potential into specific skills. (Freyberg, 1973)

For teachers to facilitate learning and create a good environment, they must be responsive to the signals or cries of the children. The major problem of a narrowly programmed curriculum is that it fails to take into account the "great variation in individual interest or readiness." She notes that, "When a child sets himself a task it is, by and large, developmentally appropriate."¹⁵⁵

Frances Hawkins (1969), in her observational study of the play of six deaf four-year-olds, writes about what she

calls "the principle of choice," or creating an environment where children can use "well their innate capacity for choice."¹⁵⁶ To do this, a teacher must meet two conditions. First, they must provide "appropriate materials" which the children can choose, use or transform. Secondly, and more subtly, the teacher must make choices about "whether, when and how to intervene in the learning process."¹⁵⁷ Therefore, a teacher "must plan to learn about the children through their choices and so begin to acquire specific content and definition, from each child for the variables of significant choice and quality of involvement."¹⁵⁸ It is by learning from each child, from his choices, and from his actions, that the teacher can begin to know when and how to intervene. (F. Hawkins, 1969)

As an example of the kind of awareness a teacher must have, Hawkins describes her second visit to the school, when she was introducing materials to the children. She observed that whatever she did, the children would copy, so in order to "sanction variety" she varied her actions. She notes, "This imitative reaction is useful to a teacher as an indication of what a child deems important at the moment-- to copy another child? to copy teacher? to find a right answer?"¹⁵⁹ By paying attention to the choices of the children and being conscious of the choices she makes, a teacher creates a very definite environment. (Hawkins, 1969)

Stokes reviewed some studies of the effect of teachers on play in which she concluded that teachers need to "care-

fully examine the goals" and that "planning is of prime importance." "Teacher involvement in play is vital."¹⁶⁰ She also notes that there is a "delicate balance" between teachers' facilitating and assisting in developing children's play and interfering too much. (Stokes, 1975) The teacher must create an environment with a variety of materials that have a variety of options and that are at the child's developmental level. (Stokes, 1975; Van Camp, 1972) "What is important," says David Hawkins, "is the confrontation with materials which play can exploit and incorporate--absorption in fresh subject matter."¹⁶¹

Part VI

CONCLUSION

CONCLUSION

A consistent finding that all behavioral scientists have made is that play is central to children's lives and affects all aspects of their development. It provides a learning and experiencing process of such great power that it exists in many different contexts and thus it covers a broad range of behaviors. This paper has examined why play is so important to the development of children. We have seen that,

In his every day life play is the child's natural form of expression, a language that brings him into a communicating relationship with others and with the world in which he lives. Through play, he learns the meanings of things and the relationship between objects and himself with a medium of motor activity and emotional expression.¹⁶²

Through play, children develop ways of thinking which they will use as adults. In an often complex world, children learn to be flexible, to meet the many varied situations they will inevitably face.

In play, the child can control the situation. This affords each child the opportunity to discover for himself who he is and how he, in his own unique way, fits into this world. Play may be the only vehicle through which a child can develop his own personal wisdom.

Children learn all the time--from early infancy they are taking in, acting, reacting and experimenting with the world. They are born with a thirst to know about their

world. Yet too often our schools and even our home environments turn enthusiastic and interested children into passive, unenthusiastic learners who are rewarded for sitting quietly at their desks, blending into a group and just "surviving" school.

The play environment offers children a unique opportunity for growth and development. Children who are accepted where they are, at their own level of growth and are in a safe and nurturing environment with room for failure which at the same time challenges and stimulates them--offering an opportunity for self-initiated inquiry and questioning using concrete materials--can learn to problem solve, think and accept responsibility for themselves. Thus the play process is uniquely valuable as a learning medium because it involves self-initiation, testing, exploration, construction, spontaneity, freedom to fail, opportunity for mastery, space to vent emotions, and the opportunity for experiential learning. People learn best that which they discover for themselves. Play provides an opportunity for this kind of learning. Teaching children in the manner that you want them to learn is a good model for successful learning. Encouraging children to think and problem solve for themselves and to accept responsibility for themselves, will help them learn to approach the world in that way.

There has been much theorizing about play, what it is, and is not, its importance and its effects, but with the notable exceptions of Smilansky, Freyberg and Eiferman,

there has been little or no empirical research about play and its effects. There is a need for studies, especially longitudinal ones, to see if children who play or learn to play are indeed, as theories and existing research suggests and indicates, more cognitively skilled, more creative, more self-initiating, more inquisitive, more flexible and better problem solvers.

Play has a great potential as a learning medium which is still often overlooked and has yet to be fully explored and utilized.

Part VII

FOOTNOTES

FOOTNOTES

¹Catherine Garvey, Play (Cambridge, Massachusetts: Harvard University Press, 1977), p. 2-3.

²Alison Jolly, The Evolution of Primate Behavior (New York: Macmillan, 1972), p. 261.

³R.E. Herron and Brian Sutton-Smith, Child's Play (New York: John Wiley & Sons, 1971), p. 186.

⁴Jolly, op. cit., p. 151.

⁵Susan Isaacs, The Nursery Years (New York: Schocken Books, 1929), p. 8.

⁶Ibid., p. 9.

⁷Jane Van Lawick-Goodall, In the Shadow of Man (Boston: Houghton-Mifflin, 1971), p. 155-6.

⁸Sigmund Freud, On Creativity and the Unconscious (New York: Harper, Colophon Books, 1925, 1958), p. 8.

⁹Ibid., p. 8.

¹⁰Ibid., p. 9.

¹¹Ibid., p. 10.

¹²Ibid., p. 11.

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Part VIII

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